

Flight, June 17, 1911.

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

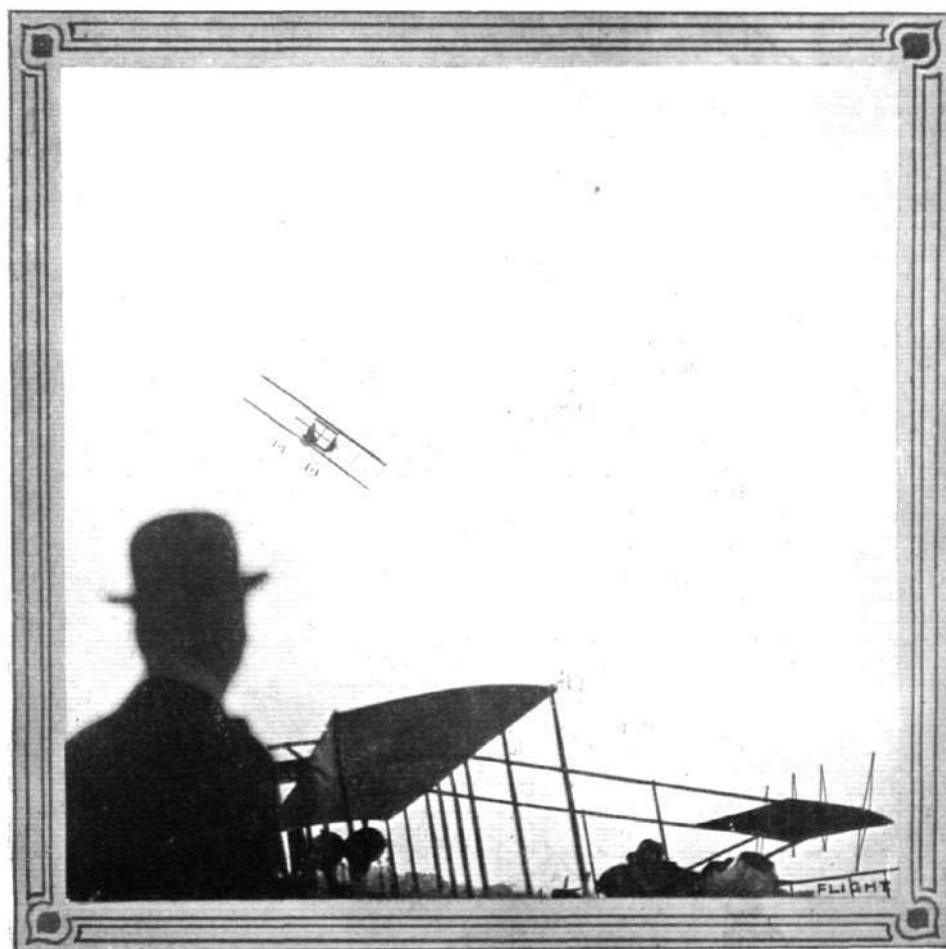
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A fine banking by Grahame-White at Hendon on a Henry Farman biplane.

AN IRRESPONSIBLE LAW CONGRESS.

A "CONGRESS" has been sitting in Paris, with the high-sounding title of the "Congrès Juridique International de Locomotion Aérienne," whose proceedings appear to have obtained a good deal of publicity. As its name implies, the purpose of this congress is to discuss the making of international laws of the air—a sufficiently ambitious programme for a commission with authority to discuss the complex and abstruse questions which must arise in connection with the formation and codifying of aerial law, but one quite outside the limitations of an unofficial gathering of lawyers such as seem to compose this Congrès Juridique. For all we know the congress may contain among its elements all that is best from the legal point of view in all the countries which are represented at its board, but it is nevertheless inevitably irresponsible in that it has no official *taclet* to give authority to its decisions and recommendations. Not to put too fine a point upon it, the congress has as much authority in matters affecting the international law of the air as the local Parliament of Little Puddleton-in-the-Marsh has in Imperial politics. Its members seem to be self-appointed, on what basis or principle we know not. It has no mandate from any government or ruler to undertake the work it has arrogated to itself—in short, it is what we have described it to be, completely irresponsible. And yet the congress itself appears to keep these very material facts in the background, for in none of the Press references to its work do we find the fact obtruded that it is undertaking gratuitous work at its own dictation, apparently satisfied with the empty honour of the publicity accorded its doings in the hospitable columns of the French Press and of those papers of other countries which take their news from there.

Whether those to whom the conception of this wonderful congress is due intended it that way or not, the Press at large seems to be labouring under the delusion that it is sitting as a result of deliberation among the States who are represented (?) in its councils. So much so that the *New York Herald* has thought it necessary to explain that the congress is an entirely private organisation, composed of some six hundred lawyers and jurists belonging to seventeen different nationalities. It seems to us that this explanation is very opportune indeed, because there appeared to be a disposition to regard the labours of this self-constituted congress much too seriously. Now, the fact has been established that the congress includes no less than six hundred men of law, every one of them prepared to make and codify laws for the governance of the aviator and his machine, be the latter aeroplane, dirigible or of some type yet to be evolved. Therefore, the plain, every-day sort of person would immediately assume that the congress must include at least some representatives of the movement most to be affected if its deliberations should eventuate into laws. But not a bit of it. There is, we gather, no single representative of aviation included. The congress is entirely without expert mechanical, technical, or scientific assistance of any kind, which, to say the very least, cannot tend to make its opinions any the more valuable. In fact, so far as practical purposes are concerned, the congress is a mere farce, though we dare wager a substantial sum that its members take themselves very seriously indeed. It is, to our way of thinking, rather more than a pity that a large body of lawyers should have got together in this way to interfere with matters which are not their concern and which might very safely

have been left to the governments of the Powers to settle for themselves—as indeed they purpose doing. No doubt a holiday in Paris is a very pleasant way of passing a week or two, even at this time of the year, but it can surely be had without the excuse of its being absolutely essential to set the world at large right upon even so interesting a question as the international law of the air.

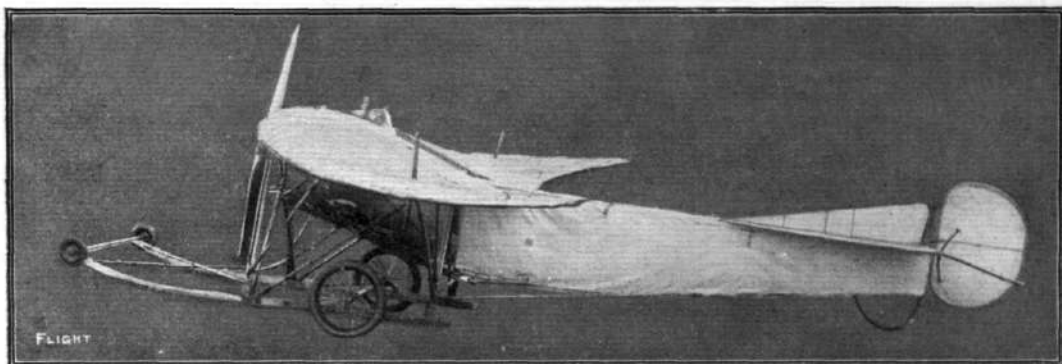
If we mistake not, the Royal Aero Club was notified of the deliberations of this body, but the Club was unable to take any cognisance of their resolutions, amongst other very good and sufficient reasons being the fact that the congress has no official status whatever. It is quite obvious that no other course was open to the Club, for to have associated itself directly or indirectly would have been to weaken its position with the properly constituted authorities when the question of codifying the international law again comes up for really serious consideration.

Now as to the work of the congress. We have before us the text in French of seventeen articles agreed upon by the congress. With the merits of these articles as bearing upon the main question of the law of the air we do not propose to deal—they may be good or they may be bad—but what we are concerned with is the form in which they are presented to the public at large. In one journal they are introduced by the remark that these articles have been adopted by the congress, and will now be discussed in the several countries represented—"pays adhérents" are the words used, exactly as though it were the official acts of an officially constituted body which were being discussed. And who is it that is to discuss these seventeen articles? Clearly the implication is that it is the Governments of the "adhering countries," which again implies an official status for the congress. It may be merely that the words we have quoted are those of the writer or sub-editor who was left to deal with the matter; but however it happened, the inference is obvious and though we do not care to flatly accuse anyone of attempting to sail under false colours we cannot help remarking that throughout its proceedings the Congrès Juridique has been at little pains to make clear its private and unofficial character. Again, in another journal, the text of the seventeen articles is prefaced with the statement that the first congress on aerial law, organised by the Comité Juridique International de l'Aviation, has terminated its labours by the adoption of seventeen articles which will form the basis of the new code. Again, this may be merely the journalist's way of putting it, or he may have made the statement in pure ignorance—confusing this "Comité" with the real Government-appointed Congress that did meet in Paris in May last year and that re-met there for a few moments only in December; but in any case the words and their meaning are perfectly plain and only open to the inference that here is a body which has been charged with a certain definite task—the evolution of an international law of the air—and that it has arrived at decisions which will be binding upon someone. Otherwise why the phrase specifically asserting that the seventeen articles will form the basis of the new code? Looking at the matter from every point of view, we cannot help the feeling that the organisers of this marvellous congress are playing a very foolish and questionable game in simply drawing up "articles" and "codes" for their own amusement without official let or hindrance. At least let all readers of *FLIGHT* bear in mind to what it all really amounts.

THE WEISS MONOPLANE.

WHETHER from the point of view of construction or design, there is no more interesting machine at Brooklands to-day

most of his energy and model after model was made and flown on the hillsides near Arundel long before the habitué

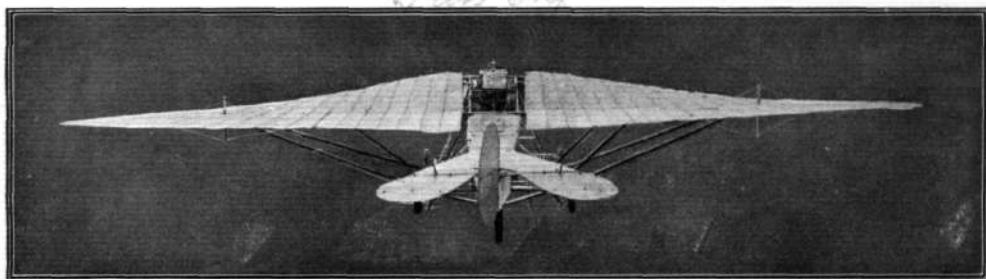


Side view of the Weiss monoplane, showing the upturned wing-tips.

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than the Weiss monoplane, which is British built, not to say home made, and is the outcome of many years' painstaking experimental work on the part of Mr. José Weiss.

of Brooklands received him and Mr. Gordon-England, who piloted a man-lifting model of that period, as newcomers amongst them.

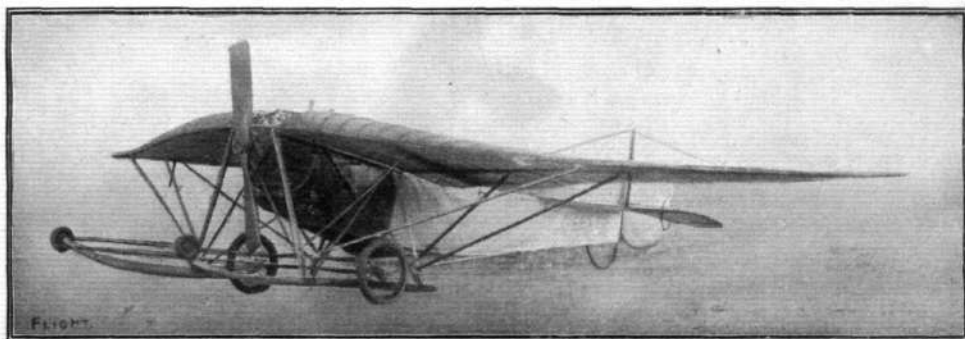


Rear view of the Weiss monoplane.

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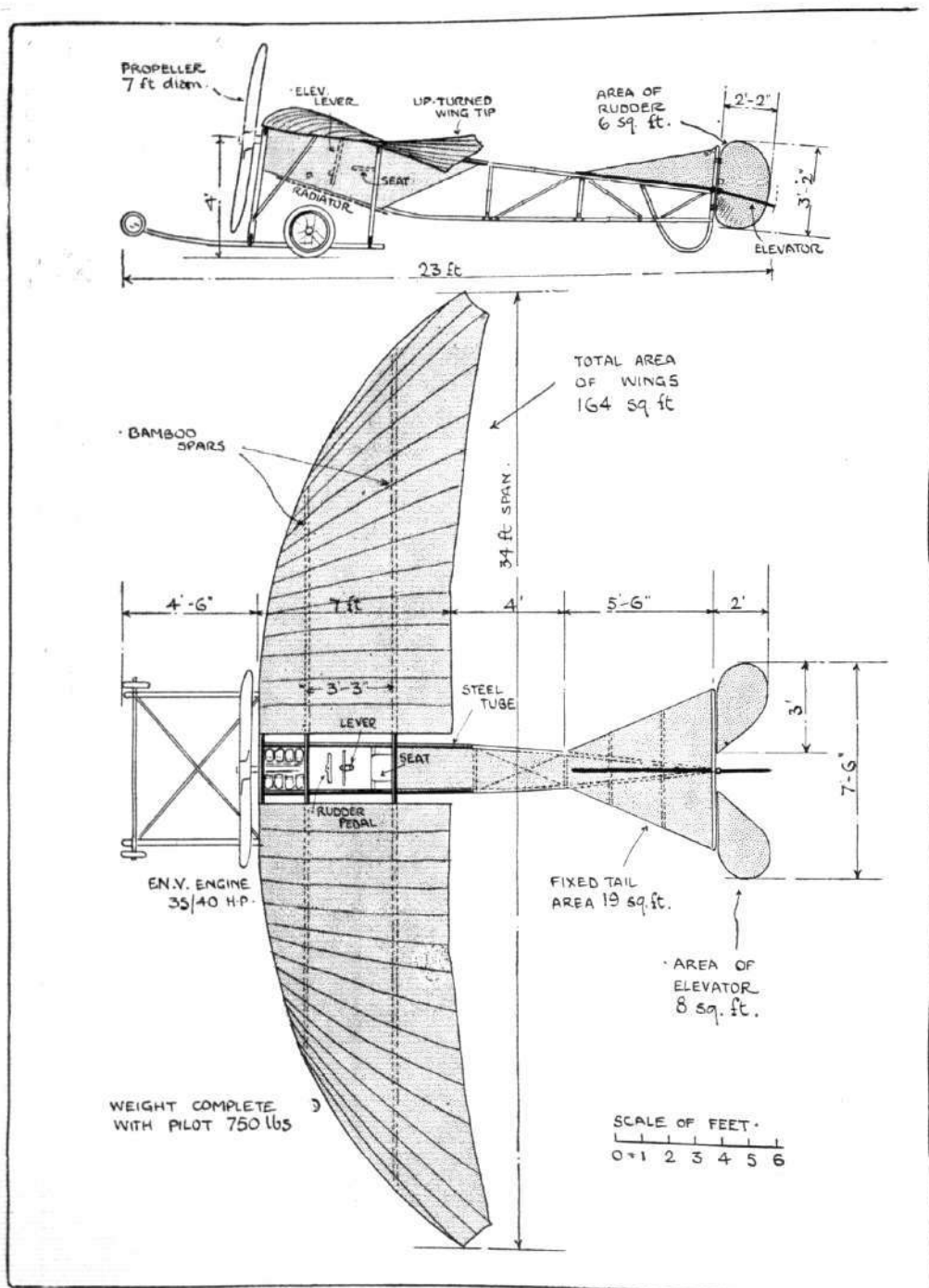
who was one of the earliest and likewise one of the most persistent investigators of that branch of aerodynamics concerned with the principle of automatic stability. It is to this side of the problem of flight that Mr. Weiss has devoted

The Weiss monoplane is, therefore, primarily interesting in that it embodies the results of Mr. Weiss's search after this elusive quality of natural stability. This attribute of the Weiss monoplane lies in the shape of the wings and in



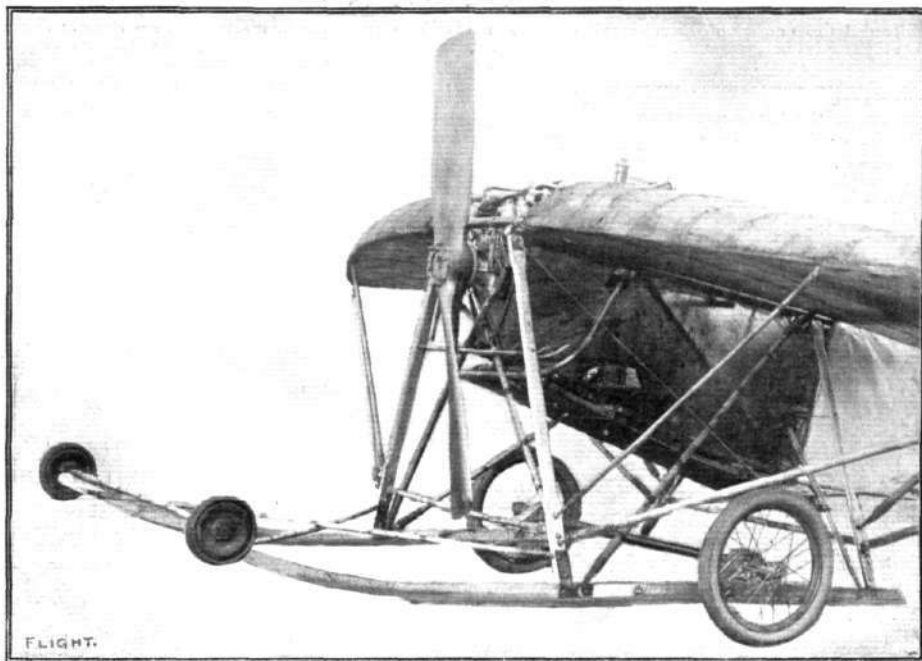
Front view of the Weiss monoplane.

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THE WEISS MONOPLANE.—Plan and elevation to scale,

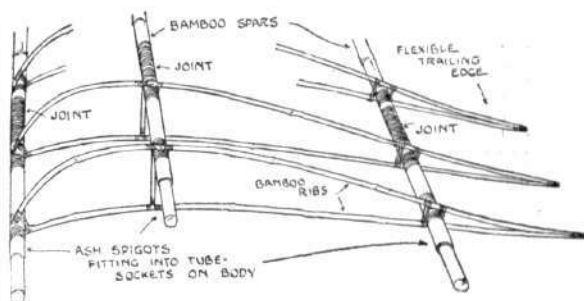
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View of the front portion of the Weiss monoplane, showing the carriage.

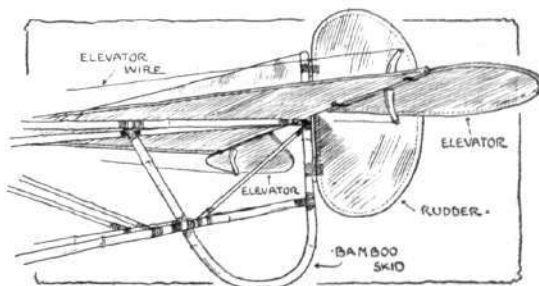
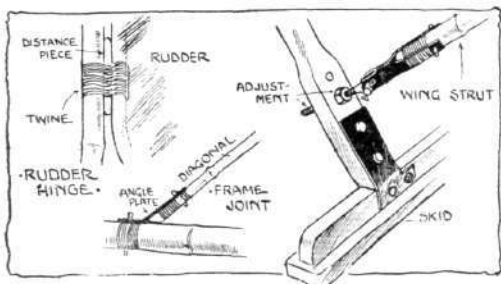
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the balance of the machine as a whole. Equilibrium is the coincidence of the centre of pressure with the vertical axis through the centre of gravity; natural stability is the quality of maintaining equilibrium under disturbing influences, and it is the function of the peculiar shape of the wings on the Weiss monoplane to confer natural stability in flight. These wings and the balance of the machine are the result of the innumerable aforementioned experiments. The wings themselves are characterised by a marked change of angle and attitude from shoulder to tip. Near the body they have a very steep camber and an attitude represented by a positive angle of incidence of about 5° . At the extremities they are flexible and flat and their tips are upturned in such a way that the attitude hereabouts presents a distinct negative angle of incidence. In addition, the entering edge of each wing slopes back from the shoulder to the tip, where it joins the trailing edge. Only 4 ft. behind the trailing edge is the commencement of the tail, which is a squat arrangement of two triangular planes, horizontal and vertical, with hinged extensions forming an elevator and rudder. These latter members are operated by a lever and pedal-bar respectively;



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Sketch illustrating the wing framework on the Weiss monoplane.

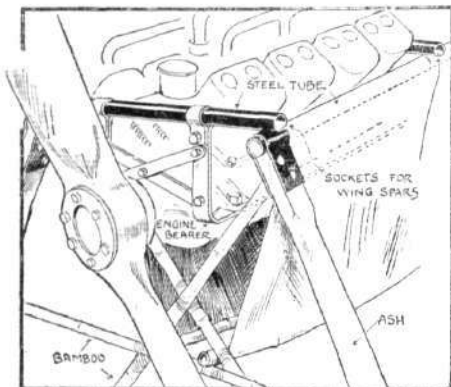


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Sketches illustrating some lashed joints used in the construction of the Weiss monoplane. The lashing is coated with tyre cement.

they are intended to be organs of direction and not organs of control in the sense of balance, and it is, of course, a feature of the Weiss monoplane that there is no provision for mechanically correcting lateral disturbance by the use of wing-warping or balancing planes.

Constructionally, the Weiss monoplane is as interesting as it is in design, for almost the entire machine is built of

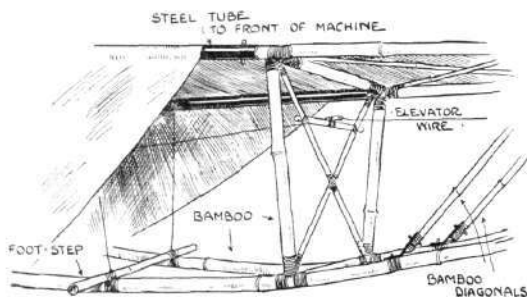


Sketch illustrating how the engine is carried in the Weiss monoplane.

bamboo and the joints are for the most part only lashed with twine, although the bamboo diagonals, which are used as struts, have a steel angle-plate joint introduced into the lashing in a manner that is illustrated by one of the accompanying sketches. It will be observed in this detail illustration of the frame-joint that the diagonals are lashed and pegged to the angle-plate, which thus forms the actual connection between the two members. A modification of this system of construction may be observed in the sketch illustrating how the bamboo diagonals that truss the wing-spars to the under-carriage are attached by ferrule-plates, lashed and pegged in place and provided with a hinged adjustment bolt. The mounting of the rudder also affords an interesting example of lashing, and an ingenious detail that will be observed in this case is the introduction of a smooth distance-piece of wood between the two bamboo members. This distance-piece holds the two pieces of bamboo sufficiently far apart

so that the knots in the bamboo are clear of one another. As the rudder turns on this hinge it rolls over on the distance-piece and the lashing remains taut in all positions, because during the movement it merely unwinds off one member on to the other.

Not only the body, but also the spars of the wings are made of bamboo on this machine and the manner in which the bamboo ribs are attached to the spars is illustrated in detail in one of the accompanying sketches. It will be observed that the wings have three spars in each and that the ribs are so deep in the centre that the lower rib member has to be specially strutted at this point in order to enable the



Sketch illustrating the body construction of the Weiss monoplane. Spars and diagonals are made of bamboo.

central main spar to afford it any support. The main spar themselves are attached to the body by ash spigots that are fastened into the bamboo and engage with the tubular steel transverse members that form the front of the body, and also serve as a support for the 8-cyl. E.N.V. engine with which this machine is equipped. The engine, as may also be observed from one of the accompanying sketches, is carried in a steel cradle slung from the same transverse steel tubes that support the wings. The body itself is mounted on an A type carriage, of which the principal members are constructed of ash; its diagonals, however, are made of bamboo. The skids of the under-carriage are suspended to a steel axle, supported on two wire wheels by elastic springs. Between the under-carriage and the engine, fastened to the bottom of the body, is the radiator, which may be seen in the photograph showing the front of the machine.

THE AEROPLANE IN MILITARY WARFARE.

By O. D. ATKINSON.

THE student of military history will perhaps remember Col. Hamley's comment on the campaign of 1796 in Germany, in "The Operations of War." To quote Col. Hamley:—

"It seems that for two armies to operate against a combined enemy by lines where, from distance or want of concert, they are independent of each other, is to confer on the enemy an advantage . . . which will compensate for considerable inferiority in numbers."

To state briefly the facts of the case: Jourdan and Moreau having been separated through carelessness and the nature of the roads, the Arch-Duke Charles seized the opportunity to interpose his army between them, thus cutting their intercommunications. He then detailed a smaller force to keep Moreau at bay, and attacking Jourdan himself with infinitely superior numbers, he drove him back to Kehl.

Moreau, through lack of communication with Jourdan, was unable to ascertain the exact circumstances of the case, and therefore advanced towards Vienna, thus widening the gap between the French armies, and giving the Arch-Duke an easy double victory. Had the communication between Moreau and Jourdan been better, the former would have turned instead of going on towards Vienna, and pursued the Arch-Duke, who would thus have been caught between two fires.

Now this is but one of one thousand similar cases in which campaigns have been lost by lack of efficient communication between the several parts of an army, and it is in this respect, as a means of

carrying dispatches, that the aeroplane is bound to make so radical a change in the principles of modern strategy.

I have no doubt that it was hard enough for the Arch-Duke to intercept the dispatches on land, but in the air, where there is a third direction in which the aeroplane can move, had Moreau possessed one, it would have been well-nigh impossible to do so.

Even if the intervening space were patrolled by the aeroplanes of the interposed army, it would only be a matter of a few extra hours for a machine belonging to part of the separated force to fly round in a large circle to its destination.

Even more wide than in strategy are the possibilities of the aeroplane in tactics. I do not propose to enter into a lengthy discussion here as to its value for scouting and for carrying staff officers, as this has already been proved in practice by the French at Grandvilliers. It is worth mention, however, though obvious, that its capabilities for scouting purposes in wooded countries are limited.

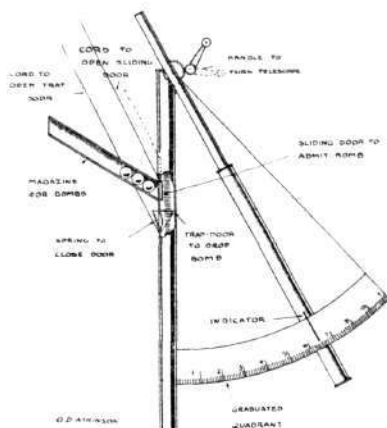
For dropping bombs, the method proposed by Capt. Pinatti and described in a recent number of FLIGHT, might be employed, but it seems to me that this throws an undue amount of calculation on the "bomb-dropper," considering the short time he has at his disposal, to be of much use over land.

For this reason, I have suggested the apparatus in the diagram, which in reality is merely a variation of the theodolite. It consists of a vertical tube through which the bomb can be dropped, and is attached to a half-quadrant. A telescope is hinged at the upper end and can move through the half-quadrant. An anemometer will be

attached to the machine, so that the speed can be read at any moment in feet per sec. When the bomb leaves the tube, it will obviously be possessed of two velocities, namely, the velocity due to gravity, and the velocity of the machine.

If t is the time in secs. taken to fall through a height, h in ft.— $\frac{1}{2}gt^2 = h$ $\therefore t = \sqrt{\frac{2h}{g}}$. If x is the reading of the anemometer, $\frac{1}{2}x\sqrt{h}$ is the horizontal distance travelled by the bomb before reaching the earth. Then, if θ be the angle, DAB, such that $\tan \theta = \frac{\frac{1}{2}x\sqrt{h}}{h} = \frac{x}{4\sqrt{h}}$, and if, at the moment when the telescope in this position is pointing at any body on the earth, the bomb is released down the vertical tube, the bomb will hit the body. It is obvious that from a great height the field of view from the telescope is very large, and, therefore, in order to obtain greater accuracy, the telescope will have to be made on the pin-hole system.

If the army is marching at 4 m.p.h., the error in not allowing for this at a height of 10,000 ft. will only be a matter of 200 ft. or so; that is to say, less than the distance occupied by a company, and if the "bomb-dropper" aims correctly at the front of the troops, he is sure to hit them somewhere.



Now it may seem hard lines on the aviator to have to wander about the air for half an hour or so, continually squinting down a telescope, with the hope of seeing something at the other end of it; but in practice armies always march along roads, and with a little skill a pilot could get vertically above a road, and follow it until he meets the opposing army.

To further simplify this system, the barometer could be graduated on the one side to read h , and on the other to read $\frac{1}{4\sqrt{h}}$, and the quadrant could be graduated to read $\tan \theta$ instead of θ , the division being performed by a slide-rule.

Opposing aeroplanes must naturally expect hostile intentions on the part of each other, and must therefore be prepared. On these occasions the ordinary rifle, although perhaps of slightly greater calibre than usual, would be a most effective weapon, and in the case of an aeroplane meeting a dirigible, a miniature shell would be used instead of ball cartridge, which on percussion would burn slowly, and thus set light to the hydrogen.

The shell used from land against the aeroplane would probably be lyddite.

In the case of lyddite, the shell is blown to pieces on explosion,

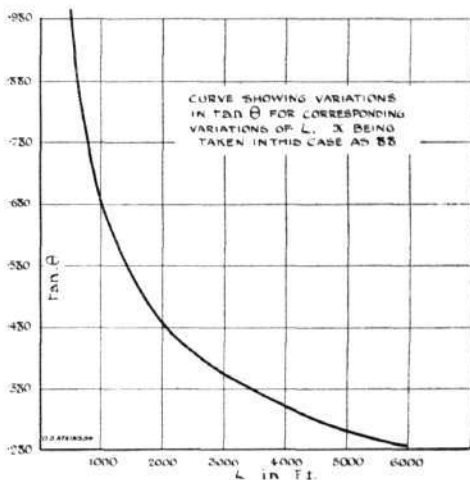
but violent currents of air are produced, which are sufficient to knock down most buildings, and would therefore be capable of bringing down an aeroplane; but were, on the other hand, shrapnel shell used, the falling shrapnel would do as much damage on land as they would to the aeroplane.

The details of the gun employed are a matter for the gun-maker, but it may as well be mentioned that any gun which is not vertical in its normal position would be entirely useless.

The aeroplane could not keep up any prolonged night attack, although it might possibly do a great deal of instantaneous damage. By flying at a great height it could reach the spot required without being heard, then plane down, and when at close quarters discharge a large number of bombs, moving off again in the confusion. The pilot would have to be careful, however, to keep outside the radius of the damage he causes.

There now remains only one sphere of action in which the almost obsolete, for military purposes, dirigible has an advantage over the aeroplane; that is, in the weight it can carry.

When a post of strategic importance is in a state of siege, one-and-a-half tons of food is by no means to be despised, and a



Zeppelin, flying at a great height, could drop this amount by means of a parachute. Even then the dirigible is in a position of great danger, and there is always the chance that the food might fall into the enemy's lines.

For the military aeroplane, as indeed for any type of aeroplane, safety is the first essential. Speed is a necessity. The rest will depend on the work required to be got out of the machine; for instance, the dispatch carrier will be a single-seater, the scouting machine a double-seater, and so on.

The installation of wireless telegraphy, also, although not at present essential, would greatly increase the radius of action of the scouting machine.

As has been the case with every other mechanical contrivance that has yet been invented, the world is divided into four parts in regard to the aeroplane. Fifty per cent. do not believe in the aeroplane for peace or war; 24½ per cent. believe that it will bring about eternal peace; the same amount believe that it will bring about eternal war. The rest know that it will follow the general rule, and that although the aeroplane will further complicate warfare, it can have no vital effect on its existence.



"THE AEROPLANE, AN ELEMENTARY TEXT-BOOK OF THE PRINCIPLES OF DYNAMIC FLIGHT." By T. O'B. Hubbard, J. H. Ledebour, B.A., and C. C. Turner. Published by Longmans Green at 2s. 6d.

Those who want a simple little text-book of elementary aerodynamics will probably find what they require in a small primer published under the joint authorship of three very active students of aerodynamics. The first chapter of the book deals with the properties of air and it is certainly an excellent thing to thus give the beginner a proper notion of the medium in which flight takes

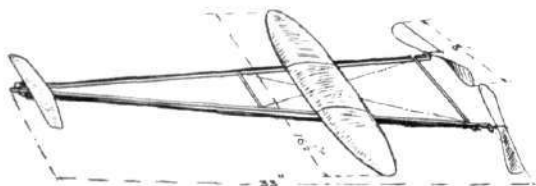
place. The second chapter deals with the resistance of the air and the inclined plane, and the third chapter appropriately follows on with a discussion on the flow of air, stream line bodies and cambered planes. This takes the reader up to the practical side of the science, Chapter 4 being devoted to gliding and the theory of the aeroplane, which is followed by chapters on stability, steering and propulsion. The final chapters are notes on aerial navigation and motors. It is a well arranged little book, is well printed, has a few appropriate sketches and not more mathematics than is absolutely necessary.

THE MANN MONOPLANE NO. 31.

By ROBERT P. GRIMMER.

THE name of R. F. Mann is probably familiar to the readers of *FLIGHT* as being that of the designer of a number of extremely efficient model aeroplanes, which have been awarded no less than eight prizes in public competitions. Noteworthy among these are awards for longest flight and steering, at Wimbledon Common (Kite and Model Aeroplane Association), June 4th, 1910; longest flight, at the Crystal Palace (Aero-Models Association), August 13th, 1910; directional control, at Paddington (Paddington Aero Club), October 29th, 1910; longest flight and duration, at Acton (Aero-Models Association), April 15th, 1911; and directional control, at Kidbrooke (Aero-Models Association), April 17th, 1911. In addition to these, Mann monoplanes have taken numerous prizes in the various competitions organised by the Arundel House School Aero Club, and they hold all the records of that club for model aeroplanes.

The machine here described (1-1-P 2-0) has flown a distance of nearly $\frac{3}{4}$ of a mile, and its normal duration is 60-70 secs., the latter figure never having been exceeded by any elastic-driven aeroplane. It was awarded three out of the five first prizes in the Easter competitions of the Aero-Models Association, and its performances have brought numerous congratulatory letters from all parts of the country. It has also attracted considerable attention in



The long-distance "Mann" model monoplane.

France, where it has been frequently mentioned in the columns of *L'Aéro* and *La Penule Sportive*.

The **Fuselage** is triangular in shape, the wood being silver spruce $\frac{1}{4}$ in. square. The two longer sides are each 34 ins. in length and 8 ins. apart at the base. The rear connecting stay of $\frac{1}{4}$ by $\frac{1}{4}$ in. silver spruce is 7 ins. long, a stream-line shape being employed to minimise air-resistance. This spans the fuselage 32 ins. from the apex of the triangle, and a second cross stay is fixed 15 ins. further forward, this latter being exactly in the centre of the frame. Absolute rigidity is obtained by an X bracing between these two stays of 30 S.W.G. Ding-Sayers wire, the strainers ($\frac{1}{4}$ in. barrel) being placed well in the rear of the main-plane. All members in the fuselage are both lashed with silk and glued. In reference to the strength of the fuselage, it will be noticed that the main-plane itself supplies two further rigid cross-bars.

The **Main-Plane** is elliptical, the maximum span being 17 ins. and the chord 4 ins., giving an aspect ratio of 4.25. The wing frame is constructed of 18 S.W.G. piano wire joined with solder, and having two ribs ($\frac{1}{4}$ inch camber) of the same material. These ribs, placed to coincide with the fuselage, are provided with L pieces, which are firmly soldered to the wing-frame front and rear. The whole is covered with Hart's Proofed Fabric, laced on with strong silk. The material is pencilled to the required shape and cut out with scissors, allowance being made for the hem and the camber. The ends are attached first by single stitches, great care being taken to secure absolute tautness, which has the effect of slightly upturning the tips. Next, single stitches are put in fore and aft of the wing, and finally the work is completed by attaching the leading and rear edges respectively by a series of stitches, a beautiful and high y-efficient aerocurve being the result. Normally, the wing-frame is attached to the fuselage before the fabric is put on, the method being described later.

The **Elevating Plane** is 7 ins. by $1\frac{1}{2}$ ins., the material employed being $\frac{1}{16}$ -in. silver spruce, placed at a dihedral angle of 30° . This gives the machine an almost complete immunity against side-gusts, enabling the use of a fin to be dispensed with. The combination of stability and directional control afforded by this device is most marked, and it certainly speaks for simplicity. The actual elevation is afforded by warping down the rear tips of the plane at an angle of approximately 5° .

Method of Attaching Planes to Fuselage.—(a) *Main Plane.*—The wire wing-frame, complete with ribs but uncovered with fabric, is placed upon the fuselage, with its leading edge 12 ins. from the rear

of the fuselage, care being taken to see that the ribs coincide with the two members of the latter. Small copper tacks are left projecting $\frac{1}{4}$ in. from the top on either side of the fuselage, and the inner side of the leading edge of the wire wing-frame is pressed tightly against these. Then the tacks are bent round in a semi-circular manner, so as to enclose the wire of the wing-frame and prevent it from moving. The wire is next cross-lashed with silk to the wood of the fuselage, the same process being repeated with regard to the rear edges, in this case, however, the copper tacks being dispensed with. All four lashings, two of which contain copper tacks, are then glued. It will be noticed that the main plane has no angle of incidence otherwise than that afforded by a minute down-turning of the rear edges.

(b) *Elevating Plane.*—This is attached by a rubber band to the front of the fuselage, the leading edge being placed 2 ins. from the prow.

Motive Power.—Round the apex of the fuselage is lashed and glued a 4-in. piece of hairpin wire in the shape of a curved W. The right and left sides (1 in. each) are covered with cycle valve-tubing, and to these hooks the fore ends of the rubber motors are attached. On each side of the machine six 30-in. strands of $\frac{1}{4}$ -in. strip elastic (Summerfield) are used, the lubricant employed being the famous Twining brand. It will be observed that the elastic is placed on the hooks rather tight, but it ceases to be so after a flight or two. At the outside of the base of the fuselage are placed two brass bearings, lashed to the members with the inevitable silk thread, and firmly glued. Through these run the shafts of the twin screws, made of hairpin wire, 1 in. long, and terminating in rubber-covered hooks, over which are placed the rear ends of the elastic motors. Two collars, one stationary and one revolving, are used between each propeller-boss and the shaft-bearing. These are lubricated with vaseline.

The **Propellers** are made of $\frac{3}{16}$ in. birch and have an individual diameter of 8 ins., and a combined effective pitch of 24 ins. They



R. F. Mann launching his long-distance model monoplane.

are not of the heavy built-up type, but are made by immersing the cut-out wood in boiling water and then heating it over a candle, which latter, by the way, is a very important detail in the workshop of the model maker. The screw can easily be bent to the required pitch, but some skill is needed not only in getting the blades at the same angle, but also in securing an identical pitch in either screw. However, such success has been obtained that in the course of bench tests of 1,000 revs. both screws have repeatedly stopped at the same second. The normal speed of the "Mann" screws is 750 revs. per min., and as over a thousand turns can be given by the geared-up winder, the machine is theoretically capable of performing a flight of 2,000 ft. in 80 secs. The flying speed in a calm is approximately 18 m.p.h., but when aided by the wind nearly twice that speed has been attained for a short distance. The screws, in common with the elevating plane and fuselage, are first carefully sandpapered and then covered with the best shellac varnish. It is due to their great efficiency, the result of three years' experimenting by R. F. Mann, that a 4-oz. machine is able to fly such huge distances with only the small power mentioned.

General.—The outstanding characteristic of the Mann monoplane, No. 31, apart from its wonderful distance and duration records, is its enormous strength. With the elastic wound up to a thousand turns, the frame shows no signs of disunion, and despite its numerous collisions with trees, telephone wires, and human beings, the machine has never sustained the least damage.

BRITISH NOTES OF THE WEEK.

The Aerial Navigation Act.

No time has been lost in formally putting into force the recent panic Act of the Government. The official notice, published below, covers, in addition to the Coronation and Procession days and the King's visit to the City on the 29th, the school children's day on June 30th at the Crystal Palace and the days of the reviews of the Officers' Training Corps and Boy Scouts by the King at Windsor on July 3rd and 4th.

The terms of the order issued by the Home Secretary, and dated June 12th, is as follows:—

"I prohibit the navigation of aircraft of every description over the County of London on the 22nd, 23rd, and 29th days of June.

"I prohibit the navigation of aircraft of every description over the County of London and over the urban districts of Penge and Beckenham on the 30th day of June.

"I prohibit the navigation of aircraft of every description over Windsor Great Park on the 3rd and 4th days of July."

Flying at Liverpool Gymkhana.

A NOVELTY was introduced in the programme of the gymkhana held at Childwall on Saturday by the Liverpool A.C. in conjunction with the Liverpool Polo Club in the shape of a couple of exhibition flights by Mr. Melly. Accompanied by Mr. Dukinfield Jones Mr. Melly flew over from his flying grounds at Waterloo early in the morning. Unfortunately the wind freshened after his arrival, and it was not until about six o'clock in the afternoon that Mr. Melly got into the air again. He then carried Mr. Lyle Rathbone, of the Liverpool A.C., for a flight of 6 minutes, during which a figure of eight was made. About half an hour later a second trip was made, this time with Mr. J. Grahame Reece. Subsequently, although the weather was not very good, Mr. Melly succeeded in flying back to his hangar at Waterloo, being accompanied again by Mr. Dukinfield Jones.

New Scottish Flying Ground.

At the opening of the new flying ground of the Scottish Aviation Co. at Barrhead on the 3rd inst., the strong wind unfortunately prevented any actual flying. The visitors, however, were much interested in the Caledonia monoplane and also in the Blériot school machine, the details of which were explained by Mr. F. Norman, the general manager. Arrangements have been completed for building both monoplanes and biplanes, the latter being suitable for carrying one or two persons.

Marking the European Circuit Course.

HELPLESS work is being put in by the Automobile Association and Motor Union in marking out the course to be taken by the competitors in the European Circuit while over British soil. The points are from Dover to Shoreham, and from there to Hendon. At the most conspicuous places large white arrows, 72 ft. in length and 12 ft. wide, will be placed on the ground, while at intermediate places smaller arrows, 36 ft. in length, will be laid down. Along the route, at certain points, captive balloons will be sent up to afford landmarks to the competitors.

An Inter Model Club Competition.

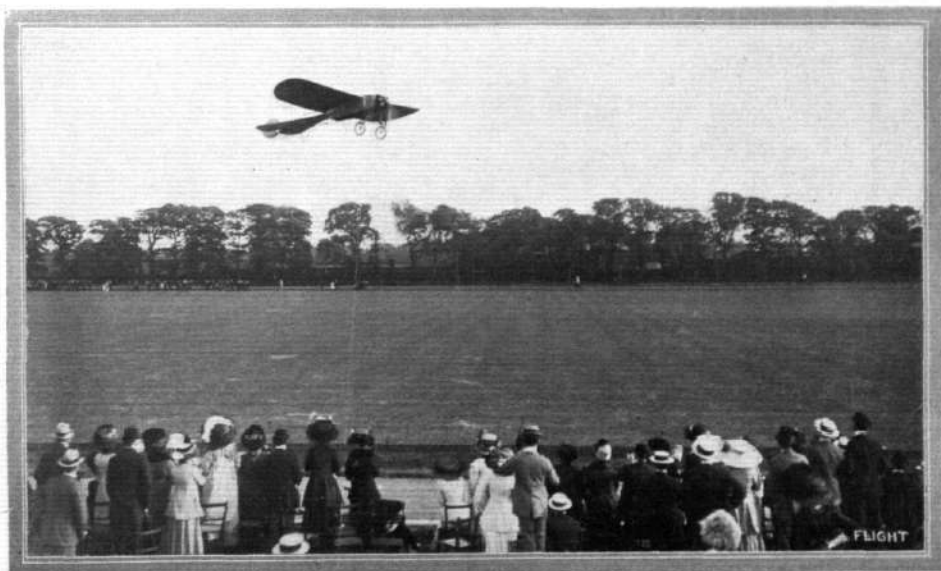
A SCHEME has been prepared by the Aero Models Association providing for an inter-club competition, the playing off being arranged on similar lines to that employed in the case of football matches for the English Cup. The machines eligible are those having more than 1 square foot but less than 2 square feet of surface. It is proposed that marks should be given under four heads—longest total flight in a straight line, general stability, directional control, and duration of flight. Twenty-five per cent. of marks will be awarded under the first and fourth heading, while for the second there will be 21 per cent., and the third, 30 per cent. of the total marks. Full particulars of the competition can be obtained from the Secretary, the Aviation Section, Automobile Association and Motor Union, Caxton House, Westminster, S.W.

Testing a Green Motor.

SOME very fine results were obtained at the Aster works recently when testing a 30-35-h.p. Green flight engine belonging to Mr. J. W. Dunne, on whose instructions it had been fitted with auxiliary ports. Tested with a standard Renaud air-brake, this engine, under the normal condition prevailing at the factory, developed 44-h.p. at 1,260 revs. per minute, 47.5-h.p. at 1,345 revs. per minute, and 52.5-h.p. at 1,460 revs. per minute. The last mentioned figure is equal to one horse power per 3½ lbs. weight of engine and magneto combined.

The Portobello Monoplane at Work Again.

HAVING had his monoplane rebuilt, Mr. Charles Hubbard was practising with it on Wednesday week, on the Portobello Golf Course. In general, the machine follows on Blériot lines, but the pilot sits in a hammock seat below the plane. In view of the previous accident, no attempt at free flight was made, but several



AT THE LIVERPOOL A.C. GYMKHANA.—Mr. H. Melly, the Principal of the Liverpool Aviation School, flying over the gymkhana grounds on Saturday on his 60-h.p. Gnome-Blériot.

times a long run was made along the level ground, the 3-cyl. 30-h.p. engine giving quite a good turn of speed.

Hove Meeting Abandoned.

OWING to some legal complications arising out of the proposal of the Hove local authorities to let the Public Recreation Ground for an aviation meeting, it has been decided not to proceed further with the matter, and the idea of holding a meeting at Hove has been abandoned, for the present at any rate.

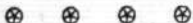
To Make Farman Machines in England.

FOLLOWING on the announcement that a Company has been formed to build the Farman biplanes and monoplanes in America

comes the news from Paris that a similar Company has been formed to build the machines in England. We understand that Mr. Holt Thomas will be associated with the new firm, and works have already been erected at Ealing where actual operations will begin within a very short time.

Vickers' New London Home.

MESSRS. VICKERS, LTD., beg to state that on and after the 10th inst. their address and registered offices will be Vickers House, Broadway, Westminster, London, S.W., and their telephone No. 10110 Gerrard (Nat.) 8 lines. Their telegraphic address will continue to be "Vickers, London."



THE AERONAUTICAL SOCIETY.

A MEETING of the Aeronautical Society of Great Britain was held on Thursday evening, June 8th, to consider the report of a Committee of Inquiry, which was appointed at the last annual general meeting to advise on the welfare of the Society. As the result of a discussion a unanimous vote was given in favour of the following section of the report, which covers the principles suggested by the Committee of Inquiry as those most essential to be incorporated in any scheme for immediate reorganisation:—

1. That it is necessary to the financial welfare of the Society that the Society should attract the support of all those interested in aeronautics, irrespective of their technical qualifications.

2. But that it is equally necessary to the standing of the Society as the officially recognised body dealing with the science of aeronautics, that the constitution of the Society should include a technical side, to which none but those qualified in the science of aeronautics shall be eligible, and admission to which would, therefore, automatically confer a technical status on those elected.

3. That the governing body of the Society shall be elected by a postal ballot taken in accordance with the methods adopted by modern institutions.

4. That provision should be made for limiting the liabilities of Members to amounts that shall be covered by their subscriptions.

At the preceding annual general meeting it was agreed "that the Report of the Committee of Inquiry should be printed and circulated to the members prior to the next meeting, which would

be convened by the Council immediately they were requested to do so by the Committee of Inquiry, and that such meeting should have power to give immediate effect to any resolutions passed."

When the Committee of Inquiry finished its work it printed and circulated its report to members in accordance with the above resolution and the acting secretary of the Society obtained the written authority of the president to call a special general meeting to consider the report. At this special meeting a technical question was raised as to whether it had been properly convened, and the hon. solicitor, Mr. H. P. Becher, advised that it should be deemed to be the adjourned general meeting. Discussion ensued, but without arriving at any satisfactory result. When, therefore, the above mentioned principles had been approved and it appeared evident that no further time remained to discuss details, a resolution was moved, in the same terms as before, to the effect that another special meeting should be convened to consider the report and that such meeting should have power to give immediate effect to any resolutions passed. The hon. solicitor objected to the inclusion of the last sentence as *ultra vires*, but owing to this legal aspect of the case not being understood by the Committee, and not, perhaps, being as clearly explained as it might have been, opposition was raised and the meeting broke up before any decision was come to.

Thus, the whole matter still remains in an indeterminate stage, though doubtless no time will be wasted in overcoming all these technical kind of points that are apt to arise at such a juncture.



GORDON-BENNETT AVIATION CUP RACE AT EASTCHURCH.—Panoramic view of the Royal Air Force station, and which has been handed over to the Club for the day by Lt.-Col. Sir George Holford. It is interesting to note the boundary hills of Kent and the River Swale, and in the distance the White Cliffs of Dover.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 13th inst., when there were present:—Mr. R. W. Wallace, K.C., in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Col. J. E. Capper, C.B., R.E., Prof. A. K. Huntington, Mr. Mervyn O'Gorman, Mr. C. F. Pollock, and Harold E. Perrin, Secretary.

New Members.—The following new members were elected:—Edgar Fuld, William Darnley Johnstone, Lieut. John Cyril Porte, R.N., Joseph Harold Russell, and Lieut. J. F. A. Trotter.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

- 93. Thomas Henry Sebag-Montefiore.
- 94. Henry Richard Busteed.

Gordon-Bennett Aviation Cup.—The Committee considered the appointment of three British representatives in the race for the Gordon-Bennett Aviation Cup at Eastchurch, on July 1st next. G. Hamel and Alec Ogilvie were selected, and the third representative will be chosen from the following reserves:—D. Graham Gilmour, C. H. Greswell, O. C. Morison, J. Radley and J. Valentine.

Flight to Botanical Gardens.—The Committee considered an application from C. Grahame-White for permission to make a flight from Hendon to the Botanical Gardens on Friday, the 16th inst. The Committee decided that such a flight could not be sanctioned.

Flights at the Stadium, Shepherd's Bush Exhibition.—The attention of the Committee was drawn to flights reported to have been made by G. E. T. Woodward at the Stadium. The Committee were of opinion that the Stadium was unsuitable for aeroplane flights and the Secretary was instructed to communicate this view to the Exhibition authorities. It was decided to caution Mr. Woodward against making further flights at the Stadium.

European Circuit.—The following officials were appointed to observe on behalf of the Club:—

- Dover ... C. G. Grunhold.
- Brighton ... Capt. Harold Danvers.
- Hendon ... C. F. Pollock, R. W. Wallace, K.C.

G. B. Cockburn and Capt. J. D. B. Fulton have been appointed *Commissaires Sportifs* to follow the race from start to finish.

Official Timekeeper.—A. Deacon, Bristol, was re-appointed Official Timekeeper.

GORDON-BENNETT AVIATION CUP.

The race for the Gordon-Bennett Aviation Cup will take place at Eastchurch, Isle of Sheppey, on Saturday, July 1st, 1911, and is timed to start at 11.46½ a.m. According to Greenwich Observatory, the time of sunset at Eastchurch on July 1st will be 8h. 16m. 30s., and the race will therefore commence 8½ hours before sunset.

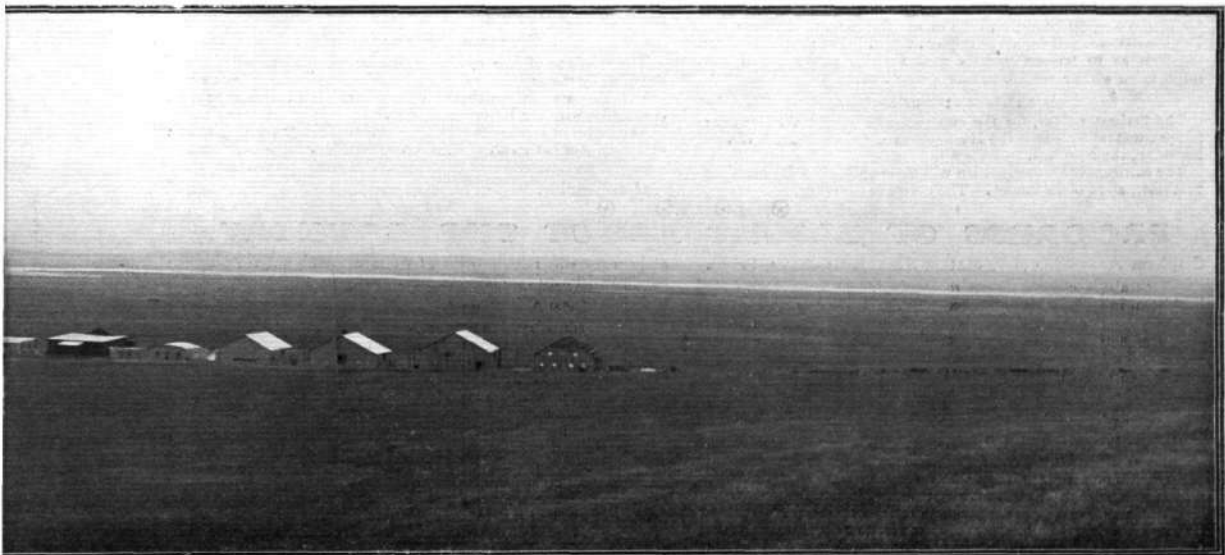
Admission.—Members of the Club will be admitted free to the special enclosures on production of their membership cards. These facilities apply to members only, and any friends accompanying them must pay for admission.

Members can now purchase, from the offices of the Club, tickets, 5s. each, for the admission of their friends to the special enclosure.

Motor Cars.—A special enclosure, giving an uninterrupted view of the whole race, will be reserved for motor cars. The charge for motor cars, including the driver, will be 10s. per car. A route map from London to Eastchurch is being prepared and will be ready in a few days.

It would greatly facilitate the arrangements if members purchased tickets for motor cars from the offices of the Club beforehand, so as to avoid any delay on entering the private road leading to the aviation ground.

Refreshments.—Arrangements have been made with the Army and Navy Stores, who will erect large marquees, where luncheons, teas and other refreshments can be obtained.



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s aerodrome over which the race will be contested on July 1st. This was taken from the hill which forms a natural grand that it was from this hill that the late Hon. C. S. Rolls practised gliding prior to flying. In the distance can be seen the and are the Royal Aero Club's sheds and Messrs. Short's factories.

Dinner to the Competitors.—It is proposed to give an informal dinner to the competitors at the close of the race, when the cup will be presented to the winner. This dinner will be held in a special marquee erected on the ground, and in order to meet the convenience of those members returning by railway, a special train will be arranged to leave Eastchurch after the dinner. Tickets, 5s. each, can now be obtained from the offices of the Club.

Special Railway Arrangements.—The South-Eastern and Chatham Railway Company will run a special train at reduced fares from Victoria on the morning of the race, leaving at 9.30 a.m., calling at Herne Hill, 9.40 a.m., and arriving at Eastchurch, 11.10 a.m.

Accommodation for the Public.—Standford Hill, which overlooks the whole of the flying ground, has been kindly handed over to the Club by Lieut.-Col. Sir George Holford. This hill forms a natural grand stand, from which every incident of the race can be seen. The charge to this hill will be 1s. Marquees for refreshments will be erected here by the Army and Navy Stores.

Aerial Navigation Act, 1911.

An official communication has been received from the Home Office, enclosing a copy of the following Order made by the Secretary of State:—

"In pursuance of the power conferred on me by the Aerial Navigation Act, 1911, I hereby, for the purpose of protecting the public from danger, make the following Order:—

"I prohibit the navigation of aircraft of every description over the county of London on the 22nd, 23rd and 29th days of June.

"I prohibit the navigation of aircraft of every description over the county of London and over the urban districts of Penge and Beckenham on the 30th day of June.

"I prohibit the navigation of aircraft of every description over Windsor Great Park on the 3rd and 4th days of July.

(Signed) "W. S. CHURCHILL,

Principal Secretaries of State.

"Any person navigating an aircraft in contravention of the foregoing Order is liable on conviction to imprisonment for six months, or to a fine of £200, or to both imprisonment and fine.

"Home Office,

"12th June, 1911."

Danger Areas.

A communication has been received from the Meteorological Office, pointing out the risks which are incurred by aviators flying over grounds from which kites, held by fine steel wire, are raised for meteorological purposes. Kites are flown regularly from the Brighton Downs and from Watlington, Oxon. The Club is making inquiries as to further grounds used for this purpose, and this information will be notified as soon as received.

Balloon Race at Hurlingham.

The Perimeter Race, for the cup presented by Mr. A. Mortimer Singer, will take place at the Hurlingham Club, Fulham, S.W., on Saturday, the 24th inst.

The entries for this competition will close on Wednesday next, the 21st inst., at 12 o'clock noon. The entrance fee is 10s.

PROGRESS OF FLIGHT

Clapham Aero Club (140, MANOR STREET, CLAPHAM, S.W.).

THE above club has been reorganised, and a non-active list has been introduced for the benefit of members not using the workshop. The subscription is 1s. 6d. per quarter. An open competition is being held on Wimbledon Common on June 22nd. Entrance fee for non-members, 1s. 1st prize, 75 per cent. entrance fees; and prize, 25 per cent. entrance fees. All wishing to enter should forward entrance fee to hon. sec. Meet at Windmill at 2.30.

Conisborough and District Aeroplane Soc. (18, CHURCH ST.).

THE glider, presented by the Sheffield Aero Club, has been cut down from 42 ft. to 24 ft. span, and on Whit Monday a small passenger was taken to a height of about 20 ft. There was not sufficient wind to carry the heavier members. The members of the club have surfaced the glider, and then take the fabric off every time the glider is housed in the hangar. The second glider is in course of construction, and it is hoped to give public demonstrations with both at the meeting which is being arranged for Coronation Day.

Glasgow Boy Scouts' 48th Troop Model Aero Club.

AT the opening of the aviation grounds at Barrhead on Saturday, June 3rd, Mr. J. S. Gordon, president of the above club, won the silver cup, his model flying in the air for the space of 40 secs. Mr. Gordon is an expert at making model aeroplanes,

Members of the Royal Aero Club will be admitted to the Hurlingham Club free, on presentation of their Royal Aero Club membership cards.

Members of the Royal Aero Club can obtain, from the Secretary of the Royal Aero Club, special vouchers for the admission to Hurlingham of their friends, who are not members of the Royal Aero Club. These vouchers will admit on payment at the entrance gates.

The Manville £500 Prize.

The fifth day for this competition is on Saturday, the 17th inst. The flights so far recorded are by C. Howard Pixton, at Brooklands, 31 minutes on May 6th, 1911, and 40 minutes on May 20th, 1911, making a total duration of 80 minutes, and by S. F. Cody, at Brooklands, on June 5th, 1911, 80 minutes.

"Daily Mail" Second £10,000 Prize.

The date of entry, without increased entry fee, has been extended to June 20th, 1911. Formal entries, accompanied by the £25, may, therefore, be made by any person up to that date, but the entry form, duly signed by the competitor himself, together with the balance of entry fee, £75, must be received on or before July 1st, 1911.

The following entries have been notified:—

Theodore Le Martin (Blériot).	O. C. Morison (Bristol).
André Beaumont (Blériot).	D. Graham Gilmour (Bristol).
Gustav W. Hamel (Blériot).	C. P. Pizey (Bristol).
James Radley.	B. C. Hicks (Blackburn monoplane).
C. Grahame-White.	Lionel Hollands.
C. H. Gresswell.	Lieut. R. A. Cammell, R.E.
Robert Lorraine.	Universal Aviation Co. (H. J. D. Astley).
S. F. Cody.	Aeronautical Syndicate, Ltd.,
James Valentine (Deperdussin).	Valkyrie aeroplane (H. Barber).
Maurice Ducrocq.	L. Breguet.—Two aeroplanes.
Pierre Prier (Bristol).	Antoinette, Ltd.—One monoplane.
M. Tabuteau (Bristol).	Morane-Borel.—Three monoplanes.
M. Tetard (Bristol).	
E. C. Gordon-England (Bristol).	

The start will be made from Brooklands on Saturday, July 22nd, 1911, at 3 p.m., and competitors will alight at the Hendon Aerodrome. The aeroplanes will remain at Hendon on the Sunday and the start for Harrogate will be made at 4 o'clock on the Monday morning. Special arrangements for the members of the Club have been made at Brooklands and Hendon whereby members will be admitted free on production of their membership cards. These facilities apply to members only, and any friends accompanying members must pay for admission.

European Circuit at Hendon.

The privilege of free admission, kindly accorded to members of the Club by the proprietors of the aerodrome, will be suspended on the three days on which the competitors arrive and depart in connection with the European Circuit.

The prices of admission will be—1s., 2s. 6d., 5s., and £1 1s.; and for motor cars, 10s. and £1 1s. in addition.

166, Piccadilly.

HAROLD E. PERRIN,
Secretary.

ABOUT THE COUNTRY.

and much credit is due to him, for under his careful teaching the 48th's model aero club is making good progress.

Kite and Model Aeroplane Assoc. (27, VICTORY RD., WIMBLEDON)

ON Wednesday, June 7th, this Association held the first of a series of interesting model aeroplane competitions at the Sports Ground, Crystal Palace. It proved a most successful meeting.

The results were as follows:—Open High Flying and Stability Competition, maximum marks 100, 75 for height, 25 for stability and landing. First prize, antimony cup; second, silver medal; third, bronze medal. 1st, G. P. Bragg Smith (Bragg Smith biplane), 89 marks; 2nd, C. Davies (Twining monoplane), 84 marks; 3rd, G. Rowlands (monoplane), 70 marks.

The second competition was the Junior Duration Competition for models made by competitors, and the prizes were models presented by Messrs. G. P. Bragg Smith, Twining and Co., and Ding Sayers. 1st, C. B. Ridley (Ridleyplane), 146½ secs. in the air; 2nd, K. F. Mann (Mann monoplane), 112 secs. in the air; 3rd, C. K. Scarf (Scarf monoplane), 77 secs. in the air. In this competition Messrs. Ridley and K. F. Mann tied for first place, and in the re-fly Ridley beat Mann by 34½ secs. The above times are for the three trials. The longest time a model was in the air in a trial was 67 secs., by C. Ridley.

Mrs. W. H. Akehurst presented the prizes to the successful competitors.



KITE AND MODEL AVIATION COMPETITION AT THE CRYSTAL PALACE.—Group of members of the Advisory Council: Sitting—Major B. Baden-Powell (President), Mrs. Akehurst, and Mr. W. H. Akehurst (Hon. Sec.); Standing: Messrs. G. P. Bragg Smith, E. W. Twining, R. M. Balston, Davis, Mann and Scarf.

The hon. sec. would like to receive entries for the Open Steering Competition on July 1st at once; the prizes will be three antimony rose bowls. Intending competitors should also state if they will stay to tea, the charge for which will be 8s each.

The Gold Cup Day on July 5th should prove to be the competition of the year, it being for models rising off the ground under their own power. The last day for entries is June 26th, first post.

Leamington Model Aero Club.

THIS club, which promises to be a great success, held its first meeting at the club's headquarters in Archery Road on Wednesday, June 7th. The Mayor of Leamington has been elected president. All readers of FLIGHT in this district who wish to join the club should communicate with the secretary at 64, Clarendon Avenue.

Parkside Aero Club (2, EDHBROOKE ROAD, PAIDINGTON).

OWING to time being so short the competition announced for to-day will not take place until July 8th at Parkside, Sudbury. Entries close on July 4th. Only one event will now take place, viz.,

the Duration Competition open to the world for all models over 4 ozs. in weight. Longest time flight. Three prizes. Entrance fee to non-members, 1s. 6d.

Sheffield Model Aero Club (35, PENRHYN ROAD).

THE above club held a successful model flying competition on Whit Monday in one of the fields kindly lent by Mr. Brightmore, of Tinsley, when some splendid flying was accomplished.

The following were the results:—

Open event—Silver medal for longest flight—G. Askew, 1,109 ft.; Second, A. D. Coakes, 972 ft..

In the three events for members of the club only the results were:—

Longest flight—1st, G. Askew, 862 ft.

Longest time in the air—1st, A. D. Coakes, 38½ seconds; 2nd, G. Askew, 32 seconds; 3rd, T. Pashley, 17 seconds.

Best speeds over 50 yards—1st, G. Askew, 2½ seconds; 2nd, A. D. Coakes, 3 seconds; 3rd, T. Pashley, 7 seconds.

SCHOOL AERO CLUB NOTES.

By ROBERT P. GRIMMER, General Secretary, British Federation of School Aero Clubs.

ROAN SCHOOL, Greenwich, possesses an enterprising aero club, with which Mr. A. C. Horth, the well-known chairman of the Aero Models Association, is associated. I have recently received a copy of the club booklet containing the rules, among which I find the very sensible one that "All members should subscribe to some periodical dealing with aeronautical subjects." At present, the Roan School Aero Club and the Simon Langton School Aero Club, to which latter I referred last week, are the only two of their kind in Kent.

Are my schoolboy readers aware of the existence of the Kite and Model Aeroplane Association, and do they know of the important series of contests organised at the Crystal Palace by this useful body? If not, let them write immediately to Mr. W. H. Akehurst, 27, Victory Road, Wimbledon, for a programme and entry form. The subscription is only 2s. 6d. per annum, and a better investment could not possibly be made. On Wednesday, the 7th inst., in a competition for youths only, with prizes value seven guineas, there were actually only half-a-dozen entries. I sincerely hope that there will be more competitors in evidence on future occasions.

One of the biggest objections to the school aero club movement, and one that I have had hurled at me from legions of headmasters, is the "frightful perils incurred in aviation." The general opinion appears to be that an aviator literally carries his life in his hands, and that if he succeeds in surviving a flight it is only by the special intervention of a merciful Providence. I am afraid that our

sensational daily Press is responsible for these extraordinary views, which are not borne out by statistics. At the present time there are in various parts of the world not less than 2,500 pilots—not necessarily all certificated—and the casualties up to the present do not much exceed fifty. The inference is that in the past the actual risk has been about 2 per cent., not per flight but per man. Assuming the average number of flights per man as being fifty—a minimum estimate, by the way—there is approximately 1 chance in 2,500 of a pilot being killed during a flight. And these risks are being daily lessened by improvements in engines and machines. To-morrow the risk may be 1 in 10,000, 1 in 20,000, 1 in 40,000.

Many of the great principles of aviation can be acquired by kite-flying, and I strongly recommend my schoolboy readers to commence their experiments with kites. By means of a kite a great deal can be learned about wind-pressure and air currents, and the experience gained is very useful in model-flying. As far as general utility goes, the kite stands before the model aeroplane, but the latter can demonstrate theories which may be applicable to its big brother. Great fun can be obtained by using a large kite to tow a cycle, and if there are no obstructing trees or telegraph wires, a big speed can be got up. A boat can be towed in the same manner with less danger of obstruction, and the pace with a fresh breeze behind would make a yachtman's hair stand on end. Then, again, there is man-lifting, of which more hereafter.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Flying Ground, Eastchurch.

DURING the early part of last week no flying was possible at Eastchurch owing to the bad weather prevailing, the wind velocity as registered by the Dines recording anemometer fluctuating between 20 and 40 miles per hour.

On Thursday there was an improvement, and at 5 a.m. Lieut. Gerrard, at the helm of Short No. 38, flew to Sheerness and back, taking a circuitous route, and keeping generally at a height of 1,700 ft., taking advantage of the upper currents, which at this elevation he found remarkably steady, although the velocity must have been somewhere in the region of 25 miles per hour.

No further flights were made during the day, but in the evening Lieut. Samson, piloting the same machine as used by Lieut. Gerrard, made a 50 minutes cross-country flight in a route which took him over Harty, Sheerness, and Faversham. As he generally prefers to do, Lieut. Samson kept at a considerable elevation—never less than 2,000 ft., and at one portion of the journey the barograph registered nearly 3,000 ft.

He was followed shortly afterwards by Lieut. Gregory, who, carrying his assistant (Private Barker) as a passenger, made a flight of 35 minutes at 2,500 ft.

On Saturday the aerodrome was again visited by their Royal Highnesses Prince and Princess Louis of Battenberg, who are showing an interest in the aviation work at Eastchurch which is very gratifying to the aviators and to the aeroplane workers generally.

Miss Kerr, lady-in-waiting to the Princess, was taken for a short flight by Lieut. Samson, and quite enjoyed the experience. Miss Kerr is the fifth lady to ascend as passenger from the Eastchurch aerodrome. After this, Lieut. Samson, with Mr. Travers as passenger, ascended to a height of 1,200 ft.

At the same time, Lieut. Gerrard started up on Short No. 34, and with Lieut. Seddon as passenger, made what proved to be the longest passenger-carrying flight of the week, being up for 44 mins., and carrying, in addition to his passenger, a full supply of petrol and oil.

His record was run very close by Lieut. Longmore, who, with Lieut. Frazer as passenger, continued in the air for 40 minutes before returning to earth.

All these flights were made with the particular object of keeping a true compass course, the Naval officers here having lost no time in tackling this most important branch of aviation work. Particular attention was paid to testing the deviation of the compass, and to getting the true position of certain prominent landmarks adjoining the aerodrome—work which is very interesting when once the aviator has mastered thoroughly the manipulation of his aeroplane, so that his flying is done instinctively. On Saturday also the Jezzi biplane was out, piloted in turn by Mr. Jezzi himself and Mr. Cooper, who both made extended flights round the grounds. Lieut. Dunne also made some further trial flights on his new monoplane during the afternoon.

On Monday, Lieut. Gerrard took up Capt. Armstrong, of H.M.S. "Cyclops," the great repair ship of the Navy. Lieut. Rutherford, of the same ship, also made his first flight, being piloted by Lieut. Longmore. Lieut. Rutherford, by the way, is no light weight, and must rank somewhere amongst the 16-stone passengers. Considering that it is a strict rule always to keep the petrol and oil tanks fully charged, the lifting qualities of the aeroplanes in use at Eastchurch cannot be doubted.

The flights were finished for the day with some fine examples of glides and figures of eight by Lieuts. Samson and Gregory.

Freshfield Aerodrome, near Liverpool.

A VERY fine cross-country flight was made on the 7th inst. by Mr. R. A. King on his Farman biplane. Leaving the aerodrome at 12.20, and crossing over the Mersey, he passed over Hoylake on the River Dee, finally coming down between Rhos and Colwyn Bay. In the afternoon Mr. King returned to his headquarters, leaving Colwyn Bay at 3.35. For the first part of the journey he was at a height of about 700 ft., but came down fairly low at Hoylake and Leasowe, afterwards rising again to a good height. He struck the Mersey at Waterloo, and following the course of the river arrived back at Freshfield at ten minutes to five.

On Friday last week, the wind being fresh and tricky, Mr. Higginbotham did not venture out till night, when the wind had moderated somewhat. Having motored over from Macclesfield for a flight he determined if possible not to be disappointed, even if by moonlight. At 9 p.m., therefore, the machine was brought out of the hangar, and, taking his mechanic with him, Mr. Higginbotham at once started off on a circular trip. At Southport he landed for a few minutes, then continuing arrived back at the hangar at

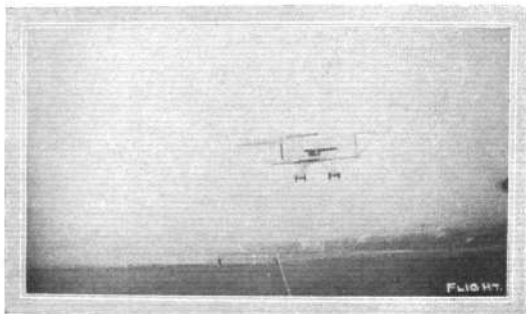
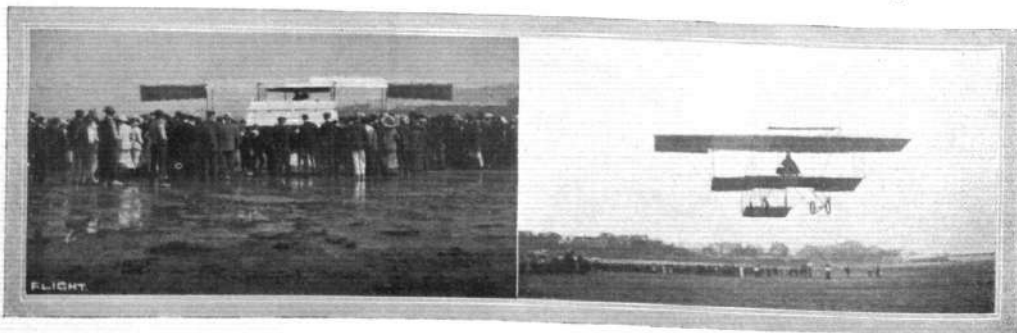


Photo by "Fotosnap."

Mr. R. A. King well up on his return journey to Freshfield from Colwyn Bay.

10.5 p.m., finding it a little difficult to land, owing to darkness by reason of the moon being clouded. On Saturday, although the weather had not improved, Mr. Higginbotham was determined to attempt a flight to Crossens and Blackpool. Starting away about 11.30 a.m., accompanied by his mechanic, he soon reached Crossens, where he met his friends by appointment, and after luncheon got away again for Blackpool. Upon arrival there he called on friends at the Hotel Metropole, had tea, and resumed his trip at 6.10, taking a course along the coast as far as St. Annes, then direct over the sea back for Freshfield, having a strong and at times very tricky wind to contend with. He covered the whole distance in 15 minutes, arriving back at 6.25, a matter of just 15 minutes earlier than a telegram, sent from Blackpool by Mr. Higginbotham to Captain Bignell, announcing his (Mr. Higginbotham's) safe arrival at Blackpool. The actual



MR. R. A. KING'S FLIGHT TO COLWYN BAY FROM FRESHFIELD.—Filling up tanks before returning, and just away.

Photo by "Fotosnap."

time for the telegram, which was handed in at Blackpool at 5.2 p.m., was therefore 1 hour 38 minutes, as against exactly 15 minutes by aeroplane—almost as good as wireless.

Liverpool Aviation School, Sandheys Avenue, Waterloo.

Two very fine cross-country flights were made by Mr. Melly on his Blériot machine last week. The one in which he visited Childwall on Saturday we have referred to elsewhere, but on the 7th inst. he rose from the school ground, with Mrs. Melly as a passenger, and at a height of 800 ft. flew to Little Crosby and back, the height on the return journey being 1,300 ft. Subsequently, another ascent was made, this time with Mr. Dukinfield Jones on board, and the railway was followed as far as Freshfield. Circling the Formby Golf Links at a height of 1,300 ft., the flyers passed over the Freshfield aerodrome and returned to Waterloo.

London Aerodrome, Collindale Avenue, Hendon.

Blériot School.—Tuesday and Wednesday last week were much too windy for air-work, but on Thursday morning the elements were more subdued, and so Mr. Dyott went out for a few straight flights, while Messrs. Slack, Metford, Capt. Hamilton, and Lieut. Maunde Thompson indulged in some rolling practice.

Friday was a very short day owing to the wind getting up before 8 a.m.; nevertheless some of the pupils were on the field early enough to put in some practice.

Saturday saw Mr. Dyott still improving and making turns in a very steady manner, while Messrs. Metford and Slack, Capt. Hamilton, and Lieut. Maunde Thompson got some rolling.

Monday last was quite a busy time, the crowning item of the day being Mr. Salmes's qualifying for his certificate in a remarkable way. He flew his figures of 8 at a height varying from 100 to 200 ft., landing each time with a *vol plané* within 10 yards of the observer. At intervals Messrs. Dyott, Slack, Abercromby, Balston, Capt. Hamilton, and Lieut. Maunde Thompson all put in some good practice. Late in the afternoon Mr. Henderson tried to pass the tests for his *brevet*, but finding the wind had gathered strength he very wisely came to the ground, giving up for the day.

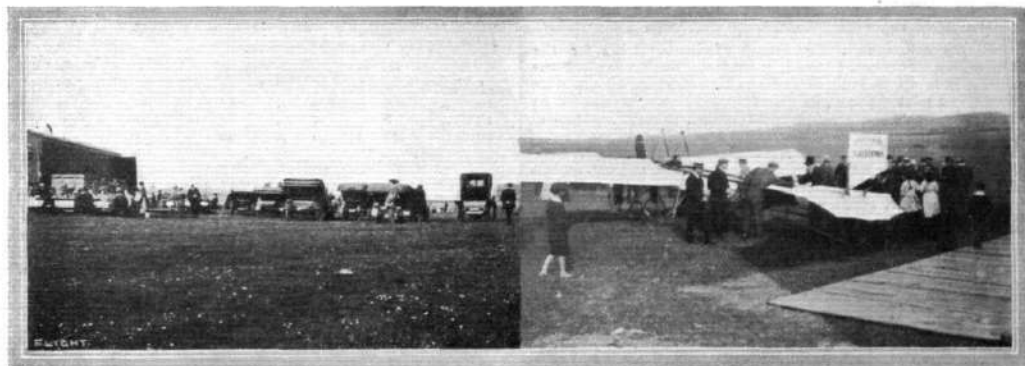
On Sunday and Monday Mr. Hamel took up several passengers on the Blériot two-seater; among them being two of his sisters, the Misses Magda and Dora Hamel, whose first experience it was. They enjoyed the trip immensely, going to a height of about 1,000 ft. In addition, Miss Vera Francis and Miss P. Da Costa were also out for their air baptism, whilst Mme. Eltzbacher was taken for a long flight at a height of 1,200 ft., and Capt. Maitland, who expressed himself very pleased with the steadiness of the big Blériot monoplane.

Grahame-White School.—From Whit Monday until the following Thursday evening the wind was too strong to allow pupils to practise, and even then, on Thursday, the conditions did not moderate until it was too late to commence tuition work, the flights being more in the nature of tests for the pupils of tuning-up and adjusting. Mr. Grahame-White, however, flew several circuits on a Farman, as did also Mr. Paterson. On Friday the recording anemometer was very busy scribbling away between the 20 and 30 miles an hour line, and consequently no machine made an appear-



Mr. H. Busteed, of the Tarrant Motor Co., Melbourne, on a Bristol biplane at Salisbury Plain, where he has been making many fine flights.

ance. Conditions were none too pleasant again on Saturday morning, but rather than disappoint the crowd which had assembled to see some flying Mr. Paterson made a flight of about six circuits at an altitude of 100 ft. Soon after he was out again with a passenger. Mr. Grahame-White brought a Farman out later, and covered several circuits very steadily with a lady passenger. He also made several excellent solo flights of an exhibition character. It was much calmer after tea, and quite a lot of flying was then seen, Mr. Grahame-White, Paterson and Hubert all going out in succession. Flying was in progress throughout the whole afternoon. On Sunday all the school pilots made extended flights on their respective machines. Hubert gave a new pupil, Mr. Driver, his first lesson by taking him up as passenger for some twenty minutes. The feature of the day's work was



OPENING OF THE SCOTTISH AVIATION CO.'S FLYING GROUND AT BARRHEAD, GLASGOW.—This is situated about 5½ miles from the city, and is conveniently served by both rail and tram. Our photographs show the general company assembled on the opening day, and on the right is the Caledonia monoplane built by the Scottish Aviation Co. from designs by Mr. F. Norman, the General Manager of the Company. Mr. Norman is standing by the machine in overalls and talking across to Mr. Wilson, of the W.W. Proofing Co., a firm which is making a speciality of balloon fabrics in Glasgow.

Grahame-White's flight on the school Gnome-Bleriot. He is apparently so much attached to his Farman machine that it is only on rare occasions that he takes a jaunt on a monoplane. However, he is quite master of the Bleriot, his first love, and made a very pretty flight of about half-an-hour's duration over the surrounding country, descending by means of a beautiful glide of 1,000 ft. Early on Monday morning, Hubert was busy with the pupils, Driver, Liles, and Davis. They were all given instruction flights of about eight circuits, each at a height of 200 ft., while later Driver was given rolling practice, Hubert guiding his movements from the passenger seat. The wind, as usual, was high during the day, but dropped again at sunset, when tuition work was resumed.

Valkyrie School.—Lieut. Wells was very busy on Thursday, June 8th, on the school machine making numerous flights the length of the aerodrome. Mr. Turner was also flying, and in the evening the chief pilot was out on the military Type B machine trying some new adjustments. He put up a very fine flight at a height of 400 or 500 ft., making numerous *vol plane* descents.

On Friday both Lieut. Wells and Mr. Perry were out on the school machine and doing well, Mr. Turner also putting in some useful flying. The wind then rising, further practice had to be abandoned.

The Valkyrie designer on Sunday put in a lot of practice on the No. 5 Type B, trying various new adjustments.

Salisbury Plain.

CONDITIONS were gusty and treacherous on Wednesday of last week until the evening, when the pupils at the Bristol school put in a good deal of practice, and Lieut. Montefiore made the test flights for his *brevet*. M. Jullerot was out making several sharp turns both right and left hand, and he afterwards carried several passengers, including two ladies. The Air Battalion was also busy, but, in view of the state of the weather, decided to postpone the cross-country flight to Aldershot. On Thursday the military flyers were as busy as ever at half-past two, and Capt. Fulton, Capt. Massy, Capt. Burke, Lieut. Cammel, Lieut. Reynolds, Lieut. Barrington-Kennett, and Lieut. Connor all put in some really good scouting practice. In the evening the military machines lined up, and a few minutes before seven Capt. Burke on his Farman started off for Aldershot. He was followed by Capt. Fulton on a Bristol, Lieut. Barrington-Kennett on a second Bristol biplane, and Lieut. Cammel on the Bleriot. Each circled the ground once before leaving and all arrived safely at Farnborough about half-past eight. The Australian pupil, Mr. H. Busted, tried for his *brevet* and made the qualifying tests at a good height. Messrs. Hotchkiss, Jullerot and Fleming were all flying with pupils, one of whom, Mr. Pepper, made a fine flight round the camp. On Friday the pupils of the Bristol School were out early while the staff was also busy getting the Renault engine machine ready for the Air Battalion. At half-past four on Saturday morning, Capt. Burke and Lieut. Cammel arrived back from Aldershot, and during the

afternoon Lieut. Cammel was flying on his Bleriot at a height of 2,000 feet, while he also took up two passengers. Capt. Fulton arrived from Aldershot at half-past seven and Lieut. Barrington-Kennett returned at nine o'clock. Fleming was busy at the Bristol School during the evening, and about the same time that Capt. Fulton arrived from Aldershot M. Jullerot landed after a trip from Bristol. He had been wired for on the previous evening to visit the works at Filton for the purpose of testing a new military extension biplane. Saturday morning had been devoted to fitting a *Clift compass* on the machine, and at 6.5 p.m. he took off for the trial trip. Finding the machine going so well, however, he decided to steer her straight over to the flying ground at Amisbury. He had prepared a map to assist him in the journey, but soon after starting was rather nonplussed to find he was sitting on it. His memory, however, served him well, and rising to a height of 3,000 ft. he experienced no difficulty in picking his way by the aid of the compass. He went due east to Hadminton, and had reached a height of 3,000 ft. in less than 10 minutes, the only difficulty being due to the north-easterly breeze passing the machine sideways. M. Jullerot, on landing, stated that he enjoyed the trip especially over the wooded parts round Corsham. Leaving Milksham to his right and Devizes to the left, M. Jullerot reached Salisbury Plain between Urchfont and Market Leamington. Guided entirely by his compass, he went straight across the Plain and landed by a *vol plane* from a height of 2,500 ft., finishing in front of the shed. The time was exactly 1 hr. 23 mins., and this was M. Jullerot's 505th flight. On Sunday the Air Battalion officers indulged in a good deal of scouting practice, and the soldiers at the Netherhaven Cavalry Barracks had an early *réveille* sounded by the engine on Lieut. Reynolds' Bristol machine. The officers were also out during the evening, while the Bristol pupils were being instructed by Messrs. Jullerot and Fleming. A similar tale must be told regarding Monday's work as regards the early morning, and during the afternoon Fleming took out the military extension Bristol and flew over to Wyley, where a fête was being held for the benefit of the parents of the lad who was accidentally run over by Graham Gilmour's motor car. So pleased were the people at the performance of the aviator that they invited him to distribute the football medals, after which he flew back to Salisbury, arriving there at 8 p.m. Among the passengers carried by M. Jullerot at Salisbury was one weighing 17 stone.

Southport Aerodrome.

MR. GAUNT is now making good progress each day in learning to manage the Baby biplane racer he has made at Southport, and hopes soon to be numbered with the constructor-aviators. The machine has but 200 sq. ft. area, and shows a good turn of speed. So far, Mr. Gaunt has been doing straight flights up to half a mile each, and is now making safer landings, being more accustomed to the drag caused by the wheel contact with the sands, which have been rather of a loose nature lately, sometimes bringing the machine to a sudden stop instead of rolling on.

FOREIGN AVIATION NEWS.

Leblanc Beats the Speed Record.

IN connection with the French eliminating trials for the Gordon-Bennett contest, Leblanc, at Etampes, on Monday beat the speed records up to a distance of 150 kiloms. Five kiloms. were covered in 2 mins. 24 secs., so that the speed was 125 kiloms. an hour, which beats the greatest speed record, hitherto standing in Nieuport's name at 119.68 k.p.h. The machine used was one of the new Bleriot, fitted with a 100 h.p. Gnome motor and a Regy propeller. The new and old records are as follows, the old records being Nieuport's, except that for 150 kiloms., which was made by Aubrun in October, 1910:—

		New record.				Old record.		
		h.	m.	s.		h.	m.	s.
10 kiloms.	...	0	4	51	...	0	5	7
20 "	...	0	9	46½	...	0	10	9½
30 "	...	0	14	42	...	0	15	11½
40 "	...	0	19	37	...	0	20	12
50 "	...	0	24	30½	...	0	25	14½
100 "	...	0	48	58½	...	0	50	36
150 "	...	1	13	35	...	1	43	19½

Nieuport Beats His Own Passenger Record.

ON Monday last Nieuport, accompanied by a friend, succeeded at Chalons in beating his own world's passenger speed record on a monoplane of his own construction by flying 150 kiloms. in 1h. 28m. 24½s. The average speed works out to 105.5 k.p.h.,

while the fastest lap was done at a speed of 108 k.p.h. The following are the new records:—

	m.	s.		m.	s.		h.	m.	s.
5 kiloms.	2	52½	25 kiloms.	14	13½	45 kiloms.	0	25	21½
10 "	5	44½	30 "	17	2½	50 "	0	28	9½
15 "	8	33½	35 "	19	49½	100 "	1	6	47½
20 "	11	23½	40 "	22	35½	150 "	1	28	24½

French Gordon-Bennett Trials.

ON Sunday two other French pilots were making trials at Toussus-le-Noble, in view of their possible selection to represent France in the Gordon-Bennett Trophy contest. Gilbert on a Bleriot monoplane covered 130 kiloms. in 1 hr. 20 mins., and then had to stop, owing to his petrol pipe fracturing, while Amerigo who on his R.E.P. machine was also out, came down after 20 kiloms., owing to mistaking some signals.

French Flyers Suspended.

AS a consequence of the Aeronautique Club of France having organised a competition during April and another one on the 4th inst., without conducting them under the rules of the F.A.I., it has been decided by the Aero Club of France to suspend the competitors Ribeyre, Perpette, Musy, Borthseier, and Cormier until Sept. 10th next, with the added warning that should they offend again they will be suspended for life. M.M. Pietri Drismontier and Razet, who were in charge of the competition, have been suspended until July 10th next.

Lieut. Menard's Tour of France.

On the 6th inst., Lieut. Menard and Lieut. Do Hu were able to leave Pau to continue their tour of France by aeroplane, but they only reached St. Gaudens, near Toulouse. At that point, Lieut. Menard received orders from General Roques to await delivery of a new Henry Farman machine of similar type to that which he had been using, and with which he was to continue his journey. This machine was delivered to the military authorities at Mourmelon on the 8th inst., and on the following day it was despatched to Lieut. Menard at Toulouse.

From Pau to Paris.

THE three Lieutenants Malherbe, Ducourneau and Princeteau left Poitiers on the morning of the 6th inst. with the intention of flying to St. Cyr, but Ducourneau was brought down at Blois owing to the wind, and in making a bad landing the machine was considerably damaged. Malherbe and Princeteau were detained in the Valley of the Cher, also due to the wind, but on the following morning they succeeded in getting as far as Pont Levoy. Lieut. Princeteau was able to continue on the 10th inst., when he reached Orleans, and on the following day he finished his journey by landing at St. Cyr.

125 k.p.h. on a Nieuport.

STARTING from Villacoublay on Monday evening Weymann, on a Nieuport monoplane, flew over from Mourmelon, the journey taking 1 hr. 17 mins., and as during best part of the way the Nieuport was flying against the wind this was no mean performance, representing as it did a speed of 125 k.p.h. The machine used was one of those built to take part in the European Circuit.

Fast Flying with the Wind.

DURING his futile endeavour to catch up the competitors in the Paris to Rome competition Vedrines made a wonderful cross-country speed record on Monday week. He left Dijon at a quarter to nine and at a quarter past nine had arrived at St. Laurent-les-Macon. As the distance between these two points is between 120 and 125 kiloms. his speed must have been in the neighbourhood of 250 kiloms. (150 miles) an hour. This pace was due in a large measure to the strong following wind, and on landing Vedrines said that the experience was a most trying one, and he never wished to fly again at such a pace.

A Long Flight by a French Officer.

MOUNTED on his Blériot monoplane Capt. Felix on the 8th inst., made a long flight. Starting from Satory he passed Moulins en Beauce and landed at Etampes, the distance covered being 120 kiloms.

Vedrines Flies Over Chantilly.

RISEING from the aerodrome at Vidamee on the 11th inst., Vedrines made his appearance over the Chantilly Racecourse immediately after the race for the French Derby had been run, and delighted the crowd by performing several evolutions over the course on his Gnome-engined Morane monoplane. Afterwards, he safely returned to his headquarters at Vidamee.

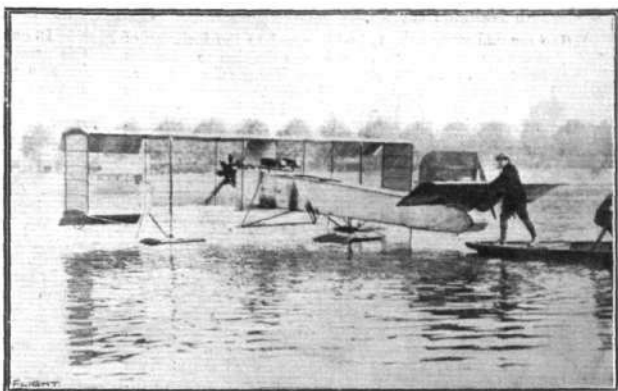
Fast Flying on an R.E.P.

LEAVING Orleans in the morning of the 8th inst., Amerigo, on his R.E.P. monoplane, against the wind, passed over Etampes, and landed at Rambouillet exactly an hour later, the distance between the two points being 115 kiloms. The other day Amerigo also made the trip from Chartres to Buc in half-an-hour.

Fatal Accidents.

LAST week-end was a disastrous one for aviation, and no less than three fatal accidents occurred, resulting in four people losing their lives. On the 9th inst., while trying to beat the height record at Johannisthal, Schendel had piloted his monoplane to a height of 1,680 metres, when the gun was fired denoting the close of the competitions for the day. Apparently then Schendel started to glide down, but after descending a short distance, the machine appeared to tilt, and then dropped practically vertically into the Gardens at Adlershof. Both the aviator and the mechanic who was also in the machine, were killed instantly. It is stated that the accident was due to both the elevator and the rudder ceasing to act.

On the previous day at Rome the Italian Marra was killed as a result of a most extraordinary accident. He had made some splendid flights at the Parioli aerodrome, but in making a sudden



The Voisin "Canard" on the Seine, fitted with her floats.

turn his machine came in contact with a high-tension electric wire, with the result that he was killed instantly, while his body was also much disfigured by the electric shock.

The third fatal accident was in Austria. While Vincenz Wiesenbach was trying to fly, at the Wiener-Neustadt flying ground, a monoplane which he had built himself, the machine doubled up when at a height of about 50 ft., and fell to earth with such a crash that the pilot was killed instantly.

A Zodiac Biplane at Rome.

DURING last week Jacques Labouchere put in some good flying at Rome on his Zodiac biplane. On the 5th inst. he flew over the Tiber circuit, covering a distance of 50 kiloms. in 45 mins., while on the following day he repeated this performance and also made two flights over the aerodrome of 20 and 30 mins. respectively.

Accident to Japanese Officers.

FORTUNATELY the accident which occurred to the Japanese officers, Capt. Tokusawa and Lieut. Ito, was not so serious as at first reported, for so far from being killed the flyers were in fact only slightly injured.

AIRSHIP NEWS.**Another Parseval Ready.**

A NEW aerial cruiser of the Parseval type has just been completed at the Bitterfeld works, and trials will shortly be held. The envelope is of 6,000 cubic metres capacity, while the hull carries two 100-h.p. motors.

"Ville de Bruxelles" Breaks Away.

WHILE preparations were being made to take the "Ville de Bruxelles" back to her hangar at Brussels, after making a cruise with a number of passengers, the anchor-rope broke and the vessel rose in the air and passed out of sight. Fortunately no one was aboard, and afterwards the dirigible came down at Huldenberg, between Louvain and Wavre.

CROSS-COUNTRY CIRCUITS.**Paris-Rome-Turin Race.**

THERE is very little to record in connection with race since our last issue, as the only one to attempt to complete the journey from Rome to Turin was Frey, who on Monday set out at mid-day. He only progressed about twelve miles, however, when he found the mist so thick that he decided to return to Rome. On Tuesday morning the weather seemed favourable, and he started off again. He landed at Castiglione to inquire his way, and then no more was heard until a message was received that he had fallen into the woods near Ronciglione. The aviator was found unconscious, with his arms and legs broken. Lieut. Chevreau progressed on the morning of the 7th inst. to Cadenet, and on the following day he continued to Nice, from where he proposed to fly back to Vincennes at the earliest opportunity. He covered the last 175 kiloms. of his journey in 1 hr. 50 mins. Leprince, who on Monday flew from Nice to Genoa, decided that owing to the damage sustained by his new monoplane he could not continue to Rome, and returned to Paris by train.

The German National Circuit.

WHEN the difficulties appeared with regard to the inclusion of Germany in the European Circuit, and it was decided to omit this section of the course, the Berlin *Zeitung am Mittag* offered a prize of £5,000 for a circuit competition in Germany. Sunday last was the day fixed for the start of this circuit, and the first stage was to Magdeburg. Seven aviators actually got away, these being Lindpaintner (Farman biplane), Volmüller (Etrich-Rumpler monoplane), Reichardt (Euler biplane), Schauenburg (Wright biplane), Müller (Saxon Works biplane), König (Albatross biplane), and Thelen (Wright biplane).

Of these all but Müller and Reichardt were accompanied by passengers. Lindpaintner, however, was the only one to complete the first stage, covering the 170 kms. (105 miles) in 2 hrs. 7 mins. Of the others, Volmüller landed close by Potsdam with motor trouble; Schauenburg was brought down at Neuhof, near Brandenburg, also due to the motor; Müller, after making a stop at Drewitz, got as far as Wansee, and retired; König reached Burg after stopping at Wansee; Thelen landed at Brandenburg for petrol, smashing his machine and spraining his thumb in alighting.

On Monday four more aviators made a start from Berlin, these being Laitsch (Albatross biplane), Buchner (Aviatik biplane), Wittenstein (M. Farman biplane), and Wiencziers (Morane monoplane). Laitsch, Buchner, Wiencziers and Wittenstein, the last mentioned accompanied by his wife, succeeded in reaching Magdeburg, and König also continued on his way, finishing the end of the first stage on Monday. On Tuesday morning Müller arrived at Magdeburg, but on arriving at the aerodrome he fell from a height of 60 feet, sustaining severe injuries. Early in the morning five of the competitors left for Schwerin, and Wiencziers was the first to get through, he landing at his destination at 6.5 a.m. Lindpaintner was the next to arrive followed soon after by König. Wittenstein and Buchner also got through, the latter stopping on the way at Gravenitz for engine trouble. The remaining stages which have to be covered are:—

June 15th ... Hamburg.	June 30th ... Dortmund.
" 17th ... Kiel.	July 2nd ... Cassel.
" 23rd ... Lueneburg.	" 3rd ... Nordhausen.
" 24th ... Hanover.	" 5th ... Halberstadt.
" 26th ... Münster.	" 7th ... Berlin.
" 28th ... Cologne.	

The event is attracting almost unprecedented interest in Germany and it is estimated that 150,000 people were present on the Johannisthal ground on Sunday morning when the first machine went up at ten minutes past five.

The European Circuit.

IN our last issue we were able to give the details of the route of this great International competition, which is due to start from Vincennes to-morrow (Sunday). The first stage will be to Rheims. Brussels should be reached on June 23rd, and by the 27th the competitors are scheduled to arrive at Hendon, after having stopped en route at Dover and Shoreham on their journey from Calais. The return journey to Calais will be made two days later.

Since we gave the list of entries in our last issue there have been 29 additions to the list, but several of them have since declared forfeit. These additions which still figure on the list, however, are a Caudron biplane (de Laet), four Morane monoplanes (Garnier, Morison, Verrept, Daiger), three Blériots (Le Lasseur, Lemartin, Kuhling), two Deperdussin monoplanes (Valguine and Baron de Francq), Aviator biplane (Denduyver), Barillon monoplane (Barillon), Tellier monoplane (Prince de Nissolle), Nieuport monoplane (Weymann), R.E.P. monoplane (Gibert), Vinet monoplane (S. Fersa), Bonnet Labranche monoplane (Marquis de Romance), Henry Farman biplane (Bill), Voisin biplane (G. Gay), Pischoff monoplane (Landron), Train monoplane (Train), Van Meel biplane (Van Meel).

Of the entries which we have already published several have been withdrawn, including the two Bristol monoplanes, a Sommer monoplane (Martin), the three Breguet biplanes, the Anzani monoplane, and one of the Astra-Wright machines (Gaubert).

Arrangements have been made for a special railway train, carrying mechanics and spare parts, to follow the route taken by the aviators from Paris through France, Holland and Belgium, to Calais. To guide the competitors across the Channel one of the Calais Chamber of Commerce tugs will be stationed midway between France and England, and from it will float a large balloon. The work of "sign-posting" England is referred to on p. 525.

French Officers in European Circuit.

PERMISSION has been accorded by General Roques to eight French officers to take part in the European Circuit. The officers selected are Captain Etève on a Maurice Farman biplane, Lieut. Blard on a Henry Farman machine, Lieuts. Chevreau, Yence, and Clavenad on Blériot monoplanes, Lieuts. Maillois and Delage on Nieuport monoplanes, and Lieut. Ludman on a Breguet biplane. In addition, Lieut. Conneau, under his *nom de vol* of "Baumont," will be flying a Blériot machine.

A cup value £100 has been offered by M. Henri Deutsch (de la Meurthe) for the officer who flies from Paris to the frontier in the quickest time. Several other prizes have also been offered for the military airmen.

ADVISORY COMMITTEE FOR AERONAUTICS— REPORT FOR THE YEAR 1910-1911.

THE report of the Advisory Committee having been presented to both Houses of Parliament, has now been issued for the year 1910-1911, and differs from the preceding report inasmuch as it is confined solely to a summary of the work undertaken on behalf of the Committee, and does not give the details of that work. These details are to be published separately, and will be known as the Technical Report of the Committee for the year 1910-1911; they will be issued as a Stationary Office publication, and will be obtainable from the usual agents. This technical report contains memoranda on—

The principle of dynamical similarity in reference to the results of experiments on the resistance of square plates normal to the current of air.

The frictional resistances of surfaces in a current of air.

Stresses and deformation in an envelope of a dirigible.

Turning moment on a dirigible inclined to the direction of motion.

The resistance of wires and ropes.

The resistance of honeycomb radiators.

Lift and drift of a Paulhan girder.

The photographic study of the flow round plates and models in a stream of water.

Thrust and efficiency of model propellers.

The disturbance of the arm of a whirling table.

The permeability and strength of balloon fabric.

Meteorology.

It is sufficiently evident that the publication is one that all serious students of aeronautics should acquire as soon as it is available. In our next issue we purpose abstracting the general report in order to give some further evidence of the ground covered by the Technical Report.

A "FLYING" MASCOT.

MANY and novel are the mascots with which motorists have adorned their cars, although in some cases it is difficult to see why they are clipped on the radiator cap. The mascot produced by Messrs. R. Beney and Co., of Carlisle Street, London, W., illustrated in the accompanying photograph, however, is a novelty which will doubtless appeal to many motorists, especially those who take a more than passing interest in flight. It represents an aerial propeller and radial engine of the Gnome type, made to exact scale, and being mounted on a shaft which runs in ball bearings the whole model revolves as soon as the car begins to move. Ordinarily the model engine and propeller are made of strong aluminium, but they can be obtained at slightly increased cost cast in gunmetal. Each cylinder of the engine is separately machined, and the whole article polished up, giving a smart appearance when revolving.

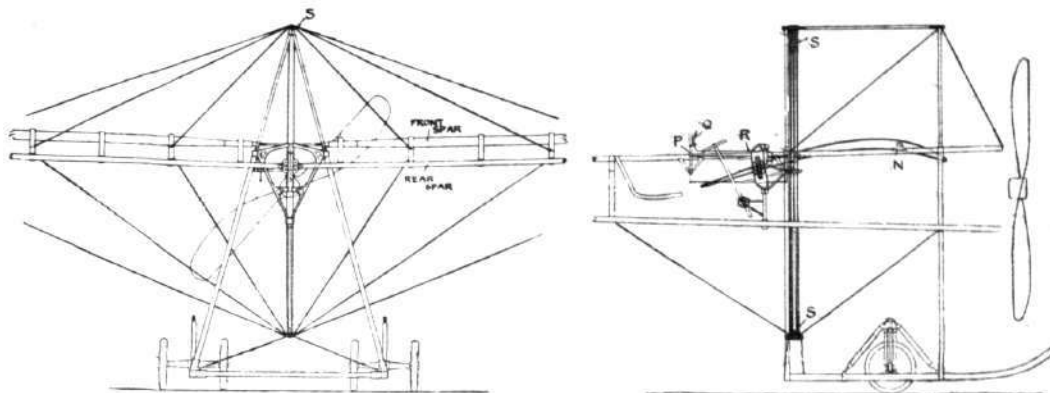


A VARIABLE-SPEED MONOPLANE.

By A. J. MOONE.

BEING particularly interested in the problem of varying the speed of aeroplanes in flight, I have devoted considerable attention to the design of a mechanism for altering the angle of the wings of a monoplane, which is one of the accepted methods of obtaining variable speed. Drawings illustrating this mechanism are given herewith, and I shall be pleased

side, are mounted on two sleeves, E, into which the ends of the spars are inserted, to act as guides. Working across the curved slot and in the centre of the plate, A, is a rack-plate, B, cut with so many teeth. Springs, C, normally retain this plate across the slot, and lock the rear spars in any one of several possible positions. The spars are raised or lowered



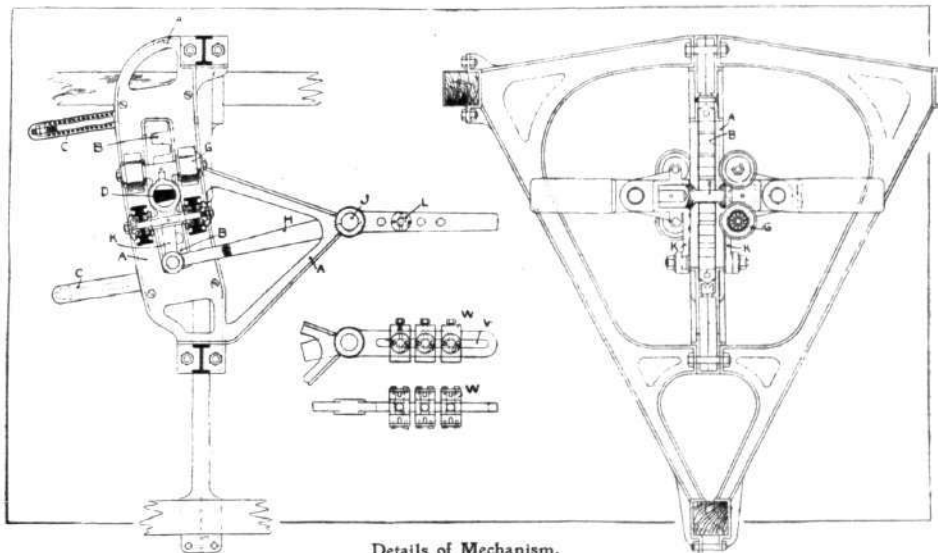
Front and Side Elevation.

to supply further particulars to any manufacturer who may be sufficiently interested to wish to try the device.

The following is a description of the mechanism :—

The wings are built up with the usual front and rear spars, and are arranged to swing on the line of the front spars. The inward thrust of the latter is provided for by connecting the two ends across the fuselage by means of a stout steel tube, M, working in bearings, NN, and tapped at the ends respectively with a right and left-handed thread. It is in

the slot by means of a crank, H, and links, K, which are moved by a lever, P, at the pilot's hand. Attached to the lever, P, is a small grip-handle, Q, which actuates the rack-plate and clears the slot by means of the Bowden wire, R, prior to the movement of lever, P. At the same time as the crank, H, actuates the inner ends of the rear spars they are moved directly throughout their entire length by means of the stay wires. Each wire connected to the upper surface of the rear spar is carried up to the rear end of the cabane,



Details of Mechanism.

this way possible to effect a nice adjustment of the front, or main stay wires. The inner ends of the rear spars are connected by a steel distance-piece, D, through a slot in a phosphor-bronze plate, A, set vertically in the centre line of the fuselage. This distance-piece takes the inward thrust from the rear spars, and eight aluminium wheels, G, four on each

Passed over a small pulley wheel, continued downwards through the centre of the fuselage and over a similar pulley wheel below, and thence up at an angle to the point from which it started, only on the under side of the wing. Short lengths of chain, S, are inserted where the wires would pass over the pulley-wheels. There are consequently six wires

passing down through the centre of the fuselage. These are connected—three on each side—to the same crank, H, only on the opposite side of its fulcrum, J. The midway position of this crank is horizontal, and pointing fore and aft. When actuated the rear end pulls the spars down, while the other end assists by pulling the wires up, or *vice versa*. The wires passing down through the centre of the fuselage have a greater movement respectively as their point of attachment to the wings approaches nearer to the fuselage, and this difference

of movement is provided for by attaching the wires to points at different distances from the fulcrum of the crank, which distances may be adjustable as shown in separate drawing of crank, with slot, V. Metal stops are fixed to the wires above and below the bolts, W. Stability may be preserved either by ailerons or wing warping. In the latter case a slight alteration of the crank is necessary, which enables the wires on one side to be pulled down, while those on the other are pulled up. A rocking arrangement is introduced for this purpose.

CORRESPONDENCE.

*. The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in FLIGHT, would much facilitate ready reference by quoting the number of each such letter.

Steering by Compass.

[1216] In an article by R.A., entitled "Steering by Compass," page 360 of the April 22nd issue of FLIGHT, reference is made to the Joanneton method of measuring speed of an aeroplane over the ground. This method is new to me under that name, and I will appreciate the courtesy if the author will explain the method and apparatus required.

Los Angeles, California.

BUEL H. GREEN.

Is the Helicopter Possible.

[1217] This is the heading of letter No. 1140, in which the writer, Mr. Wm. Weaver, asserts that it is possible, and suggests a 100-h.p. engine to drive a pair of helical screws, and a 50-h.p. engine to drive a tractor or propeller. There is an error in the above suggestion which nearly all advocates of the helicopter make, and it is this. We will assume there is a 100 h.p. engine to lift the machine and a 50-h.p. engine to drive it forward at the rate of, say, 30 miles per hour, yet they fail to see that an additional 30 miles pressure is thus added to the helical blades while moving from back to front position, and 30 miles less pressure on these blades when moving from front to back. This uneven pressure will naturally cause the machine to tilt backwards, and the reader will doubtless see the absurdity of a 50-h.p. engine driving (?) when a 100-h.p. engine is pulling at the (now) "inclined backward" position. I have come to the conclusion that the helicopter is possible, and will be the machine of the future. But the only direct lifting machine capable of travelling horizontally must not depend on the usual propeller: the helicopter must also be the propeller, thus the resistance on the helical blades while travelling in the direction of the machine must be less than when travelling in the opposite direction of the machine.

I have been occupied with this problem over three years, and now claim to have solved the principle of the helicopter, which is different to any yet published, and which is capable of lifting, driving, and turning by the same mechanism at the will of the operator.

I should like the discussion on this subject to be continued, or if any reader is sufficiently interested I am willing to give further details by private correspondence.

Nelson, Lancs.

HELIC.

The Vortex Principle of Flight.

[1218] The thanks of the whole noble army of inventors are due to you for your leader of June 3rd on "Copying Nature in Flight." Also for having given publicity to Mr. Dring's novel and most interesting ideas of propulsion. It is, of course, too much to expect the commercial mind to recognise what science shows us every day, that the wildest freaks of the imagination of to-day become the commonplaces of to-morrow. Yet without the assistance of the commercial portion of the community what is the poor inventor to do? The solution of this greatest of all problems is yet to seek. But a step in the right direction is taken when a paper like FLIGHT gives the inventor that publicity which is the beginning of commercial success. If he can have his ideas put before the public it may be that someone with money to spare, yet whose soul is not entirely absorbed in *£ s. d.*, may see, be convinced, and come forward with the necessary help, whereas without such publicity he could do nothing.

Mr. Dring's idea is a good one, it may be a very good one, but we must not lose sight of the fact that while his theory of insect flight may be—I think it is—perfectly sound, it does not follow that the problem of human flight is to proceed to its solution along the same lines. Our motor cars do not run like a gazelle

though they are swifter, our boats do not use fins like a fish yet they go faster, and I do not think the airship of the future will copy either the bird or the insect in its flight. In fact, I am obliged to plead guilty to being one of those imaginative people who are looking for some entirely new method of propulsion through the air, since it seems to me that to construct a machine whose sole means of support and propulsion is a series of extremely fragile blades in a very exposed part of the machine rotating at a high speed, with the prospect of sudden death in the event of a collision even with a bird, is not a common-sense proposition. And I am afraid this fundamental objection applies to all propellers, whether screw, vortex, or paddle-wheel. I am always tempted to imagine what sort of yachts we should have if all the sails had to rotate violently round the masts, and what sort of Atlantic voyage one might expect to make in a steamboat forced along by a propeller 100 ft. in diameter made of very thin wood that would fly to pieces if it happened to hit a fish. Even then the simile is not perfect, for both the yacht and the steamboat would at least float when the means of propulsion had broken down. However, it is easier to criticise than to construct, and though I have found three good and sufficient methods—each quite practicable—of getting over the difficulty, there are still too many constructional difficulties in the way for me to yet call the problem solved, all events from the point of view of the commercial mind.

Manchester Street, W.

W. LE MAÎTRE.

[1219] I was greatly interested in Mr. Dring's article and your comment on the use of the vortex in flight.

I should, however, like to point out that I exhibited at the Aero Club Show last year, and also this, my Vortex aeroplane. Last year I had a tank of water in which I demonstrated the action and existence of the vortex. I also flew a small model carrying 2 lbs. per sq. ft. in the gallery. I have also been granted a patent for my Vortex aeroplane. This proves the originality of my idea of applying the vortex to the aeroplane.

As regards the efficiency of my Vortex model aeroplane over all other types, I am willing to stake £5 that my Vortex model will fly or glide farther without a propeller than any other model will fly or glide with one. The conditions are:—

That the machines carry 2 lbs. per sq. ft., that the wind shall be blowing over 15 m.p.h., and that the models shall be started against the wind.

Ealing.

W. T. HOWARD.

[1220] The satisfaction which one might otherwise feel at seeing the study of insect flight receive in your columns the attention it deserves is nullified by the character of the exposition which appeared in your issue of the 3rd inst.

However desirous you may be of advancing the study in question, the publication of fantastic imaginings such as Mr. Dring's "Vortex Principle of Flight" is calculated simply to bring the whole matter into ridicule, and I must protest most strongly against pseudo-science of this kind being placed before the public as if it were worthy of serious consideration.

It would take too much space here to discuss all the errors, explicit or implicit, in Mr. Dring's article. It is sufficient to summarise the main points of his theory, which are:—

- (i) That flies' wings do not flap or vibrate, but rotate.
- (ii) That this rotation creates a vortex.
- (iii) That air is drawn through the centre of this vortex, and is discharged in such manner as to give a reaction which sustains and propels the insect.
- (iv) That a simple rotary movement of fixed blades round a central axis can give a mechanical reproduction of the flight of a fly which is more efficient than a natural form.

As regards (i) it is absolutely incorrect to say that flies' wings do not vibrate but rotate. Moreover, Mr. Dring is in a position to know that this is incorrect. When, some months ago, he first brought forward his "vortex principle" in the pages of the *Aero*, a corre-

spondent wrote and referred him to the conclusive proof which has lately been afforded by photographs of the vibratory motion of flies' wings. These pictures, taken by Dr. Lucien Bull at the Marey Institute in Paris, admit of no gainsaying. They show that flies' wings are (as was already known) simple oscillating propellers, obtaining their reactions in a similar manner to all such propellers. Mr. Dring owes it to your readers to explain how he meets this evidence of the falseness of his "principle."

The main foundation of the theory having fallen to the ground it is not necessary to go into points (ii) and (iii) misleading as they are. As regards point (iv) all that need be said is that the "Vortex propeller" (which purports to be a much more efficient reproduction of a fly's wing than the original form) is simply a rather indifferent centrifugal blower without a casing.

Tooting Graveney.

BERTRAM G. COOPER.

Maurice, not Henry Farman.

[1221] I shall be glad if you will make the rectification of a statement which appears in your last issue concerning Lord Northcliffe at Buc last Monday. This flight was not in the company of Mr. Henry Farman but with Mr. Maurice Farman, whose machines are the only biplanes to be flown there.

J. LUNTLEY,

Airmanship Editor *Daily Mail*, Paris.

Wireless at the Aerodromes.

[1222] Writing as a "wireless" and aeroplane enthusiast, being connected with both, I have thought how convenient and progressive it would be for our aerodromes dotted over these islands to be installed with wireless telegraphy, thereby linking them up for correspondence respecting the dispatch and arrival of aviators from one air-station to another, weather conditions, &c.

There is an opportunity now for our existing aerodromes to strike out and take a lead in this direction, thereby proving themselves "up-to-date" before our Continental friends put the notion into practice. The expenses would not be great, and if this meets the eye of any concern that would like to correspond on the subject, I shall be most pleased to furnish details that may seem necessary, even if the subject only gives food for thought.

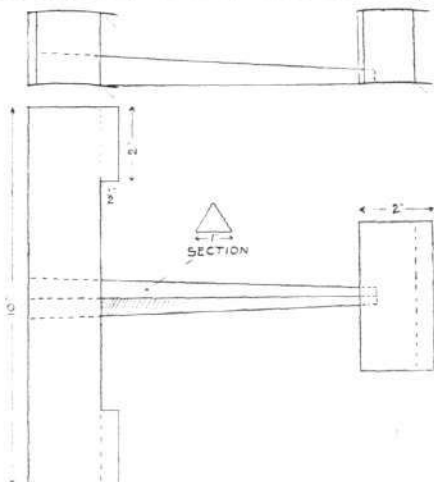
Whitley Bay.

HERBERT HENKÉ.

MODELS.

Paper Models.

[1223] Being a reader of your valuable paper I venture to enclose sketch of a paper glider I have made. This model seems to possess



a considerable amount of lateral stability, and I have obtained some fine glides.

Ilkley.

J. T. BURNS.

[1224] Could you, through the medium of your valuable paper, advise me as to the length of the longest flight made in still air by a paper glider, *launched*, not thrown, from the hand, that has come before your notice?

Under the above conditions I obtained a glide of 54 ft. with an Antoinette, the planes of which I coated with thin shellac to keep

them rigid. This machine had an overall length of 8 ins., and a stretch of 7 ins.

Could you tell me further about how many full-sized machines are in England, France, Germany, and Austria, respectively? For this country (the United States) I figure about 175, but I would like to have the official figures.

New York.

JOHN GUY GILPATRICK.

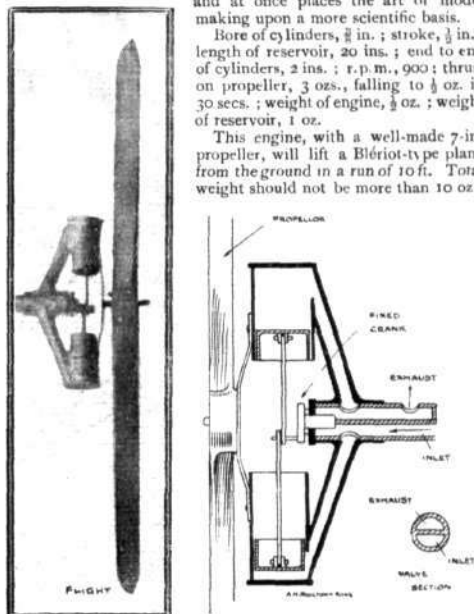
Compressed Air Motor.

[1225] We should esteem it a favour if you would publish the following particulars of the compressed air motor which we are advertising in your paper. We think it sufficiently novel to be of interest to your readers.

It admirably answers the purpose for which it was designed, and we believe meets a general desire for something better than elastic, and at once places the art of model making upon a more scientific basis.

Bore of cylinders, $\frac{3}{8}$ in.; stroke, $\frac{1}{2}$ in.; length of reservoir, 20 ins.; end to end of cylinders, 2 ins.; r.p.m., 900; thrust on propeller, 3 ozs., falling to $\frac{1}{2}$ oz. in 30 secs.; weight of engine, $\frac{1}{2}$ oz.; weight of reservoir, 1 oz.

This engine, with a well-made 7-in. propeller, will lift a Blériot-type plane from the ground in a run of 10 ft. Total weight should not be more than 10 ozs.



We also fix this engine to a steam boiler enclosed in a gauze stream line case, and it will give a pull of 3 ozs. on a 7-inch propeller for 3 mins. The total weight of engine, boiler, and fuel is only $2\frac{1}{2}$ ozs.

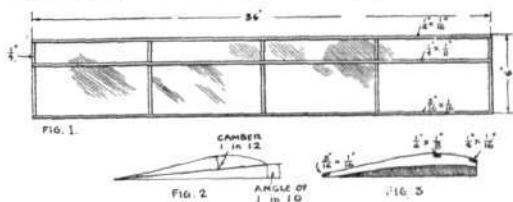
Please publish this in any form you like.

A. H. BOULTON AND SON.

Whitmore Reans, Wolverhampton.

Model Planes.

[1226] I enclose herewith the sketch of method of constructing model planes. Fig. 1 is a plan of the plane. Fig. 2 is a section of a rib. Fig. 3 is a section of a rib showing spars let into the rib.



The main spar and the leading spar-joints are secured with glue and a brad. The trailing-edge spar is secured by sticking with secotine and binding with thread. Four of the ribs have the shaded part in Fig. 3, but the centre one is left alone. The fabric is stretched on templates, and secured to the framework by secotine. Cardiff.

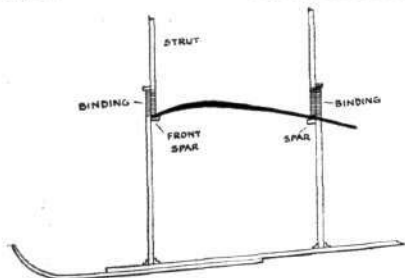
A. BEER.

Model Farman.

[1227] In my model Farman biplane, can you tell me how I can apply runners as the entering edge of the lower plane is just less than $\frac{1}{4}$ in. thick.

Kensington.

G. D. S. ROBERTSON,
Member of the A.L.B.E.

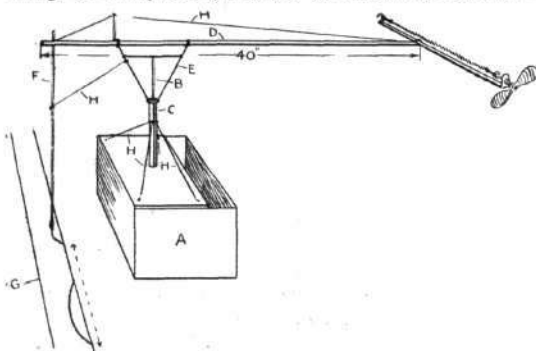


☞ [The accompanying sketch is a suggested method that might prove suitable.—E.D.]

Testing Model Propellers.

[1228] I was interested in seeing letter 1019 in FLIGHT because of the resemblance between Mr. F. Law's apparatus and one that my brother and I made lately for comparing our model propellers, though our machine is a little more elaborate. We would be glad to know whether you consider our idea practicable as a method of comparing propellers of the same diameter.

In the accompanying diagram, A is a box which forms the base and in which are put weights to hold the apparatus firmly; B is the spindle put through a piece of tubing, C, into the box and held firmly inside the box and by stay wires, H; D is the boom which swings on this spindle by means of the framework, E, which is



made of metal strips fastened together and to the boom by bolts and nuts. This boom is a cane. F is an arm fastened to the short end of the boom and held by a stay wire, H, and has a brush on the end. This brush is inked, and as the boom swings round pulled by the propeller it marks a curve on a piece of paper, G, which is kept moving regularly by means of clockwork. The distance is then measured between the beginning of each curve, and this distance is, I think, proportional to the speed of revolution and can be compared with that of other propellers. My difficulty (and can you or any reader help me out of it?) is to get a motor that does several circuits instead of only two. Another difficulty I have with models I make is that they cant over the opposite way to which the propeller revolves.

Devices.

C. G. PARSONS.



SPECIAL NOTICE.

Owing to the Coronation Holidays, it is necessary for the issue of FLIGHT dated June 24th to go to press on Monday, June 19th. All Editorial and Advertisement matter must therefore reach the office not later than first post on Monday, June 19th.

IMPORTS AND EXPORTS, 1910-11.

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

	Imports.		Exports.		Re-Exportation.	
	1910.	1911.	1910.	1911.	1910.	1911.
January	2,516	1,196	750	1,088	550	Nil
February	437	3,129	2,950	1,786	—	—
March...	7,516	11,327	128	1,027	600	357
April...	6,305	2,110	950	807	1,470	4,343
May...	846	1,707	400	2,471	350	1,972
	17,620	19,469	5,178	7,179	2,970	6,672

NEW COMPANIES REGISTERED.

British Deperdussin Aeroplane Synd., Ltd., 30, Regent Street, S.W.—Capital £1,000, in 1,000 founders' shares of 1s. and 950 ordinary shares of £1. First Directors, Lieut. J. C. Porte, R.N., D. Santoni.

E. T. Willows, Ltd.—Capital £3,000, in £1 shares. Acquiring the business of a manufacturer of aeronautical apparatus carried on by E. T. Willows.



Aeronautical Patents Published.

Applied for in 1909.

Published June 15th, 1911.

21,220. J. D. ROOTS. Flying machine.

Applied for in 1910.

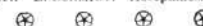
Published June 15th, 1911.

- 9,554. PAUL. Flying machines.
- 12,195. H. AND H. A. SANDERS. Flying machines.
- 12,810. H. LOHMANN. Maintaining equilibrium in aeroplanes.
- 13,454. R. McLIMAN. Aerial machines.
- 18,481. W. H. BOOTH. Monoplanes.
- 18,683. W. F. DUGINS. Aeronautical craft.
- 19,946. W. S. ROMME. Flying machines.
- 21,215. M. S. LEWIS. Balancing device for aeroplanes.

Applied for in 1911.

Published June 15th, 1911.

- 2,340. R. GIAMPIETRO. Aeroplanes.
- 2,911. L. SCHMIDT. Aeroplanes.



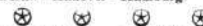
DIARY OF COMING EVENTS.

British General Events.

- July 1. — Gordon-Bennett Aviation Cup Contest.
- July 22-Aug. 5. Daily Mail Round England Cup Contest.
- Oct. 31. — Close of British Michelin Cup.

Foreign Fixtures.

- June 18. — European Circuit—Paris, Brussels, London, Paris.
- July 11. — Paris—Bordeaux—Paris.
- July. — Italian Circuit.
- July 1-15. — Circuit Berlin—Hanover—Hamburg.



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